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DAVID LIVINGSTONE.

On Saturday, the 18th of April, the remains of the great traveller were deposited under the nave of Westminster Abbey, near those of Major Rennel, one of the founders of the African Society, and the staunch friend and adviser of Mungo Park. They were followed to their last resting-place by the President, Secretaries, and leading members of that Geographical Society which, for upwards of a quarter of a century, had been Livingstone's firm and constant friend, through good report and evil report, and in whose map-room the body had rested since its arrival in England. On Sunday afternoon there was a special service in the Abbey, in memory of Dr. Livingstone, when the Dean preached a sermon, in which he dwelt on the nobleness and grandeur of a traveller's vocation, and on the special character of the labours of that illustrious explorer who had now found a last resting-place at Westminster.

Dr. Stanley said, "that through the indomitable energy of Livingstone, we have revealed to us for the first time that vast tract of Central Africa which, to the contemplation of the geographer, has been literally transformed from a howling wilderness into the glory of Lebanon. The blank of unexplored regions which in every earlier map formed the heart of Africa, is now disclosed to us, adorned with those magnificent forests, that chain of lakes, 'glittering'—to use the native expression—'like stars in the desert;' those falls more splendid, we are told, even than Niagara, which no eye of civilized man had ever before beheld, where above the far-resounding thunder of the cataract and the flying comets of snow-white foam, and the rising columns of ever-ascending spray, and the bright rainbows arching over the clouds, the simple natives had for centuries seen the emblem — the glorious emblem — of everlasting Deity — the unchangeable seated enthroned above the changeable. And to his untiring exertions, continued down to the very last efforts of exhausted nature, we owe the gradual limitation of the basin within which must at last be found those hidden fountains that have lured on traveller after traveller, and have hitherto baffled them all. There was implanted in him a love for the African race. He always loved to dwell on their individual acts of kindness. He reiterated his assurance that their moral perceptions of good and evil are not essentially different from ours, and out of this sense of his fellowship with them as children of the same heavenly Father and of the possibility of embracing them within the fold and flock of the same heavenly Shepherd, there arose, as he wandered on amongst them, the passionate desire, ever mounting to a higher and yet higher pitch of burning indignation and fierce determination, to expose, and exposing to strike, a fatal blow at that monster evil which, by general testimony, is the one prevailing cause of African misery and degradation—the European and Asiatic slave trade. He grappled with it as with the coils of a deadly serpent, and it recognised in him in turn its most formidable foe. Each strove to strangle each, and in and by that struggle he perished, too soon, alas! for him to know how nearly he had succeeded—not, we trust, too soon for us to secure that his success shall be accomplished, and the work which in its commencement and continued inspiration was the brightest side of the name of Wilberforce shall in its completion shed the chief glory on the name of Livingstone. Such he was as an explorer, such as a philanthropist. What was his peculiar place as a missionary? It was a very peculiar place indeed. He was a missionary, not only as ordained for that work by the hands of a small group of faithful ministers, some of whom yet live to see how he followed out the charge which they had laid upon him, but as fashioned for the work by special gifts of his Creator. Preacher he was not, teacher he was not. His was not the eloquence of tongue or pen. His career was very different from this, and by that difference singularly instructive. He brought with him to his task the absolute conviction, not only, as I have said, of the common elements of humanity shared alike by heathens and by Christians, but of the common elements of Christianity shared by all Christians. Himself born and bred in one of the seceding communions of Scotland, allied by the nearest domestic ties and by his own missionary vocation to one of the chief Nonconformist Churches of England, he yet held himself free to join heart and soul with all others. For the venerable Established Church of his native land, for the ancient Church and the Liturgy of this country—with one of whose bishops he laboured as a brother through good report and evil—even for the Roman Church of Portugal and the disciples of Ignatius Loyola, from whom in theological sentiment he must have been farthest removed—he had for all and each of these his good word of commendation. If he freely blamed, he also freely and justly praised. He remained faithful to the generous motto of the society which sent him forth. 'I never,' he said—strange

and rare confession—'I never, as a missionary, felt myself to be either a Presbyterian, Episcopalian, or Independent, or called upon in any way to love one denomination less than another.' Followed to his grave by the leading Nonconformists of England, by the staunchest Presbyterians of Scotland, all the Churches may claim him as their own. All English-speaking races may regard him as their son. But the most profound and powerful missionary agency as proclaimed both by his teaching and example, is that of individual character. The most expressive in itself and in its transparent simplicity is that testimony which he rendered years ago. 'No one,' he says, 'ever gains much influence in Africa without purity and uprightness. The acts of a stranger are keenly scrutinised by both old and young. I have heard women speaking in admiration of a white man because he was pure, and never was guilty of secret immorality. Had he been so they would have known it, and, untutored heathens though they be, they would have despised him in consequence.' He was loved and feared, not as a magician or a spectre, but as a just and kind benefactor."

Dr. Stanley, towards the end of his sermon, touchingly alluded to the warm friendship between Livingstone and Sir Roderick Murchison; and to the satisfaction which, had he lived, would have been felt by the venerable President of the Geographical Society at the last honours paid by the nation to that illustrious traveller, to whom he had ever been so true a friend.

GEOGRAPHICAL NOTES ON THE BASINS OF THE OXUS AND THE ZARAFSHÁN.

(By the late Alexis Fedchenko).

THIS eminent traveller, some months before his lamented death, wrote to me that Mrs. Fedchenko had been engaged in translating into Russian the Essay on the Oxus countries which I had furnished to the new edition of Wood's journey, and asked about some points requiring explanation. This led to a correspondence, of great interest to me, which was cut short by the sad accident at Chamouni. The translation was published in the *Bulletin of the Imperial Geographical Society of St. Petersburg* (No. 6, 1873), and was accompanied by very copious notes and elucidations, filling, in fact, thirty octavo pages, written by M. Fedchenko himself, frequently aided, as the writer mentions, by his accomplished countryman M. N. de Khanikoff. Though naturally gratified that two men so distinguished should have thought my Essay worthy of their commentary, it is only recently that I have been able to obtain a translation of their remarks (into French). I find a great deal of the matter of so much interest and value to geographers that it occurs to me that a rendering of selected notes may be acceptable to the readers of the *Geographical Magazine*. I have added some fresh remarks of my own where it appeared desirable, but I need scarcely say that in such circumstances there has been no desire for controversy.

The best map to refer to in connection with these notes is the English version of the map purporting to be M. Fedchenko's own, which appeared in *Ocean Highways* for August last ("Map of Kokand and the Upper Syr-Daria"). I say "purporting to be Fedchenko's" because, as he mentioned in his letters, and as he repeats on several occasions in these notes, the map, after passing out of his hands, underwent considerable modification, at least in that part of it which represents Hissar and the adjoining districts immediately north of the Oxus. These modifications were, certainly in some respects, for the worse.* But M. Fedchenko had prepared another map to illustrate his wife's translation of the Oxus Essay, which, taking my map of the Oxus countries (see *Ocean Highways* for March, 1873) for basis, introduced into the northern part of the Oxus Basin such corrections as his better materials enabled him to make. This map has not yet, I believe, been published, and it is much to be regretted. The references to the Essay are to the *first* issue, as I have at present no copy of the second (see *Ocean Highways* for February, 1874, p. 475).

The gentleman to whom I have been indebted for the French version of the notes, tells me that he found the style difficult to render; and indeed, some of the more important notes, involving orographical description and the like, are as yet a little obscure to me, and have been omitted from the present selection.

I. *Solomon's Throne at Osh.*

In section 7 of the Essay (p. xl.) reference is made to the notion of Wilford and Heeren, that the famous Stone Tower which marks the path across Imaus, *i.e.* Pamir, in Ptolemy's route of the Sevic caravan, was an ancient structure, or excavation reported to exist at Osh in Ferghana, and known as the Chihil Sitún ("forty columns") or the Takht-i-Suliman ("Throne of Solomon").

Though Ritter considered this identification of the route to be established past question,* more recent knowledge has rendered it extremely improbable that it lay through Ferghana (*i.e.* Kokand) at all; and what M. Fedchenko says throws doubt on the real existence of any structure which could be connected with the Turris Lapidea:—

Note 1.—"The antiquities of Osh were visited by us during our journey in Kokan, and are described in the narrative which is now being prepared for the press. Takht-i-Suleiman is the name of a hill almost completely surrounded by public gardens. Near the eastern foot of the hill there are some remains, but they are all comparatively modern, and in the Musulman style."

We can scarcely judge how far this is absolutely conclusive till we see Mrs. Fedchenko's publication of her husband's narrative, completed by herself, which is now under preparation in an English dress. What Moorcroft's employé, Izzab 'Allah, says, is only this:—"Osh is celebrated by the name of Takht-i-Suliman, and the tomb of Asof Barkhia, the Vizir of Suliman, is still shown here: it is of great size. The Throne of Suliman is on a small hill west from Osh, surmounted by a building with a dome. In the spring great numbers of people repair hither in pilgrimage to the tomb" (*J. R. A. S.*, vii., 324). Nazarov, who travelled in 1813, and whose journey was translated by Klaproth, says:—"At the custom-station of Osh the caravans to and from China pay duties. To the right of the road we saw afar off, in a narrow valley of the Kashgar-Divan, two ancient edifices, under which there is a great cave. Our guide said this was the Takht-i-Suleiman" (*Magaz. Asiat.*, i., 58-59). These notices amount to very little, and I cannot now refer to Wilford's, which was, I believe, the original basis of the belief in the existence of remarkable remains of great antiquity at Osh.

II. *Documents of the Russian War Office and English Foreign Office. (Essay*, p. li*).*

Note 4.—"The documents which Colonel Yule calls 'apocryphal,' are extremely remarkable, and in their way unique. I have seen both that at St. Petersburg and that which the English bought from Klaproth. The latter is undoubtedly a forgery of Klaproth's, and he got a large sum from the English for it. As regards the first, it is by no means admitted by everybody to be a forgery, and it is extremely difficult to see how it could be the work of Klaproth, who, in the year when the document was received at the War Office (1806), was at Peking. Serious and acute objections have been made to Sir H. Rawlinson's views by M. N. de Khanikoff (*Proc. R. G. S.*, x., 301). Whatever be the truth as to the Russian manuscript being the work of one who really made the journey, it is, if I may judge by those parts of the itinerary which refer

* M. Fedchenko's letter says this was done in "the Russian *General* Office." Some word seems to be omitted, so I do not known what office is intended.

* *Nunmehr wohl unzweifelhaft* (viii., 693).

to places visited by myself, far too confused to be of use for geographical purposes."

I have no intention of re-opening this almost threadbare discussion, but only to indicate that the alleged date of the reception of those documents into the Russian archives is very precisely questioned in the page on which M. Fedchenko was commenting. I cannot hesitate to state my conviction that when the evidence of the Russian office shall be submitted to the examination of unbiassed persons it will be found that those documents, instead of having been received in 1806 (a date which, as I have pointed out on the page in question, is "*really the date of the letter of the pretended traveller, which is attached to the series*, i.e., *it is an organic part of the fiction*"), were really received in some year between 1816 and 1826.

III. *Kizilyart Mountains.* (*Essay*, p. lviii).

Notes 16, 17.—"I write *art*, the English write *yart*. The word art is applied by the natives to a mountain pass. I look on the application of the term to the whole chain as inappropriate. We have already made confusion enough by the application of the term Kashgar-Daván (Kashgar Pass), extending it from the Pass itself to the whole chain; the consequence of which is that as far west as Khojand we still find 'Kashgar Daván' to the south of us!"

Kizilart, or -yart, meaning therefore "Red-Pass," was the name which Hayward learned to apply to the high mountains which he saw west of Kashgar, and which M. Fedchenko, who looked on them from the Alaï steppe, bounding it on the south, called Trans-Alaï. It does not seem to me that the objection made by the respected annotator is of any great moment. There are very few *genuine* proper names (so to speak) of mountain-chains. The name of *Grampians*, as applied in modern geography books, is as much an invention of geographers as Kizilyart or Kashgar-dabán. Geographers must have names for mountain ranges, as geologists must have names for rocks and systems, though they do not in general so *consciously* invent them, but usually fancy that they are adopting an indigenous name.* A large number of geographical names of mountain ranges, generally accepted, will be found to be merely names of passes, extended to the ranges which are crossed by them. And why not?

Some precise folk even object to our saying the river Hwang-ho, or the river Karà-sú, because *Ho* and *Sú* mean river. On the same principle we ought to object to the river Esk or the river Avon, the river Dee or the river Don, nay even to the river Rhine, for all these names have been supposed to be words of like signification to *Ho* and *Sú*.

On the other hand, names like Trans-Alaï are really confusing, at least until we become callous, by habitual use to their etymological meaning, as in the case of *ultramontane*.

As we are on the subject of names of passes and ranges I will recur to Karakorum, as to the meaning of which we had some discussion last year (see *Ocean Highways* for July, 1873, p. 170). I there disputed the statement that Karakorum meant Black Mountains, and quoted Captain (now Lieutenant-Colonel) Henry Strachey for its meaning "Black *gravel*." I recently had the pleasure of receiving a letter from our Envoy at Kashgar, who mentions that he had read the letter in question *in situ*, *i.e.*, on the Karakorum Pass, and then and there made enquiry.

"*Korum*," he says, "is not exactly gravel, as we use that word, but rather the sharp-pointed *débris* of fallen rocks which break up into pieces. The term Karakorum is not merely applied to a pass, but is given to any place where these *débris* are found. For instance, on leaving the Karakash River, and marching up the ravine leading to the Sanju Pass, we found the valley covered with these sharp-pointed *débris*, and the Kirghiz call the place Kichik (Little) Karakorum."

* Pere Huc never seems to have arrived at a knowledge (which yet it is not difficult to gather from his own book) that the Tibetan *La*, which he heard applied to so many mountain ridges, did not mean *mountain* at all, but *Pass*, like Col, Kotal, Dabán, Art, Ling, &c. And so he gives an absurd etymology of Potala the Vatican of the grand Lama, as being "Buddha-La, the Hill of Buddha!" The most absolute example of the nomenclature referred to above is, I suppose, that of "the Ghats," *i.e.* the passes, as applied to the well-known range of Western India.

IV. *Abramoff's Expedition to the Iskander Kul, &c.*

There is a long and valuable note (23) on the orography and hydrography of the upper part and southern side of the Zarafshán Basin, but it is one of those which require a little further consideration to do justice to them, and I will here only quote an incidental passage.

In the Essay (p. lix) mention is made of Mácha and other tracts near the remote sources of the Zarafshán as counting among the most unknown regions of Asia.

"This can no longer be justly said," says M. Fedchenko, "since the famous scientific expedition of General Abramoff! Not only has the physical structure of the region been examined and elucidated, but also positive details have been collected regarding the people and political organization of those districts. Mácha and the other Beg-ships have ceased to exist since the day when the whole region (called now-a-days, by the Russians, Kohistán) was annexed to the Zarafshán territory.

"It is surprising that none of the results of the expedition have come to Colonel Yule's knowledge; for they have been published by those who took part in it, viz., by M. Muishenkoff, M. Grebenkin, and myself. Latterly it has been announced that a description of the orography and topography of the Kohistán, from the pen of M. Aminoff, chief of the surveyors with the expedition, will appear in vol. iii. of the Annual Collection of the Committee of Statistics."

I plead guilty to ignorance of the results of General Abramoff's expedition. Ever since I heard of it, in Mr. R. Michell's translation of Fedchenko's previous sketch of the Zarafshán Topography (*Journal R.G.S.* for 1870, p. 449), I have been looking out for a report of this important exploration, but except a brief notice in Sir Roderick's last Address to the Society (*Proc. XV.*, p. 288; *Journal R.G.S.*, xli., p. clxxxii), not a word, so far as I can find, has been made accessible to English geographers on this subject. If it is impossible for any Englishman not called Michell to learn Russian, and against the principles of Parliamentary Government to give any encouragement to that study, for fear of interfering with private enterprise and the laws of supply and demand, could not our wealthy Society find means to induce a competent Russian, or some foreign scholar acquainted with Russian, to supply its *Proceedings* regularly with translations of important geographical matter?

More than four months ago Mr. Ney Elias informed me that an actual visit to the long-sought ruins of Karakorum had at last been reported to the Imperial Geographical Society of St. Petersburg by M. Paderin. From that day to this I have sought in vain for further information either in the *Proceedings of the Royal Geographical Society*, or in —— a Geographical Review that shall be nameless!

V. *Gaseous Exhalations in the Kohistán of the Zarafshán.*

On a reference (p. lix) to Lehmann's mention of a "burning mountain" in this region, which he explains as being a coal bed on fire:

Note 26.—"This was entirely confirmed when the expedition of 1870 explored this mountain, called Kán-tágh. From different fissures gases escape at so high a temperature that pieces of wood placed in them speedily catch fire. A tea-kettle, which we set in a stream of these heated gases, very soon boiled, and MM. Muishenkoff, Kuhn, and I had the refreshment of a cup of tea. A few yards lower down the escaping gases are rich in sulphur, which deposits on stones with which the natives stop the orifices. At one point the vapours are emitted in extraordinary quan-

tity in contact with an enormous limestone rock, the surface of which they erode. The singular aspect of this rock, half hidden in a floating mist of mephitic vapours, dwells in my memory as one of the most surprising natural phenomena in Turkistan. If this country were a resort of tourists, this rock would become a regular lion. It would be desirable to make a special study of this spot. The products would indeed not be precious, consisting as they do (chiefly) of sulphur and alum; but the phenomena should be of the highest interest to the mineralogist, and might furnish data regarding the formation and modification of a variety of substances. My visit to the Kán-tágh vividly recalled one which I had made to Vesuvius a little after the great eruption of 1868; there were the same masses of mephitic vapour, the same sulphureous smell, the same burning soil. Nevertheless, the phenomena of the Kán-tágh are entirely due to a subterranean conflagration of coal-beds, which we see in many places cropping out on the surface."

Note 28.—"According to native statements flames do appear on the Kán-tágh, but only at night, and occasionally when the gases are discharged in unusual quantity. It is not to be supposed, however, that the incandescent gas rises to a great height above the ground, but only that the copious clouds of vapour which rise reflect the glow from the fissures. And this effect can only be seen from the vicinity, so that one cannot conceive that Mas'údi saw it from a distance of 100 parasangs!* Might it not have been rather an aurora borealis which he witnessed?—a possible circumstance, as is proved by the aurora which appeared in October 1870, and which was seen also at Tashkand.† It is very probable that the natives would attribute such a phenomenon to combustion of the ground. And, after examining the passage in Mas'údi, I am satisfied that it does not refer to the Kán-tágh. In fact, he represents the burning ground, discharging mephitic gases, as situated on a road between Khorasan and China; and he says that, notwithstanding the difficulties of the passage, travellers preferred that route as the shortest. Now, the position of the Kán-tágh is quite secluded even from village roads, and no one frequents it but those who go to gather sulphur. I am told that there is another spot, to the north of the province of Hissár, called Khoja-i-Áb-i-Garm (quite distinct from Karategin Áb-i-Garm), where the phenomena of the Kán-tágh are repeated in a form even more energetic. May not this place be on a once frequented road?"

On the last point I can say nothing. But one expected to find the remarkable place described above to be identified as the actual site of the Sal-ammoniac deposits, of which so striking an account is given by old Arab geographers, and to which Sir H. Rawlinson has alluded in the passage just referred to in a note. Take (*e.g.*) Edrisi's notice, which is briefest:—"On the flanks of these mountains" (viz. of Botm—certainly embracing the site visited by Fedchenko and his party) "one finds at intervals numerous orifices emitting vapours which are like smoke by day, like flame by night: it is from these that is collected the best Sal-ammoniac" (*Jaubert's Edrisi*, i., 486). And the name under which the substance is sold points to this district as its source. M. Fedchenko says:—

Note 27.—"I have indeed seen the ammoniac of Fán (Fán-Naushádir) in the bazars; but I have never witnessed its extraction *in situ;* nor do I find anything on the subject in the published observations of the geologist of the expedition, M. Muishenkoff."

VI. *Passes between the Zarafshán and Oxus Basins.*

The Essay says (p. lix), "From about long. 68° to 69° the Fántágh seems to be singularly impenetrable. One pass leads southward into the province of Hissar by the lake called Iskander-Kúl (lake of Alexander), and the crest of this can be crossed only by pedestrians, so that travellers have to dispose of their horses before crossing, and to procure fresh animals on the other side. This is probably the pass called by Baber Sir-i-ták, which was traversed by him in 1500 . . . . . From Hissar he ascended a branch of the Hissar River called the Kám-rúd, descending by the lake through the Fán and Kshtút territories into Sogdiana; and he gives a most formidable description of the road, which must have been indeed a bad one to make such an impression on Baber, with all his experience."*

Note 30.—"The statement (about the impassibility of the range) is a mistake; evidently Colonel Yule's information was here defective. West of the Iskandar-Kúl we know of two passes near the sources of the river of Mághián, and called respectively Síbí-Surkh and Dugdán; whilst to the east of it General Abramoff's Expedition obtained information regarding several passes, one of which, leading by the sources of the Zíbí River, which flows through the province of Hissar, is described as a very easy one."

Note 31.—"The pass referred to (by the lake) is called by the natives Mura, and was explored in 1870. Its height was found to be upwards of 12,000 feet. The ascent is difficult; you have to walk in the snow until you come to the first ridge; then you cross a small glacier, which still pertains to the Zarafshán Basin; then you climb the second ridge, which forms the watershed between the Zarafshán and Oxus. On the path across the snow we saw a quantity of the footmarks and droppings of sheep. These are sent across in summer to the hill-pastures of the Zarafshán, and return in the autumn. Colonel Yule quotes me for the statement about horses being unable to cross; but since my visit to the pass I will no longer pledge myself that it is absolutely impracticable for horses, at least during certain months, when the state of the snow is favourable. Natives who have to traverse such passes generally prefer to go on foot because they have less trouble in difficult places. Thus, at the Alaï, they told me of a certain journey which required three days if on horseback, but only two days if on foot. The chiefs in the highlands of the Zarafshán

* Sir H. Rawlinson interprets Mas'údi as saying that the flames *extended over* 100 parasangs (*Journal R. G. S.*, xlii., p. 506).—*Y.*

† The French version made for me says: "*qui fut aperçue même de Tashkent;*" but as Tashkand is a good deal further north, I do not appreciate the force of the *même.* It was in the same month, and perhaps therefore the same night, that we saw the aurora at Palermo, to the great astonishment of the natives.—*Y.*

* Here is what Baber says: "In these roads, which are extremely dangerous, often overhanging precipices, and in the steep and narrow hill passes and straits which we were obliged to ascend, numbers of our horses and camels failed—and were unable to proceed. After four or five days' march we reached the mountain pass of Sir-e-Ták. It is a pass, and such a pass! Never did I see one so narrow and steep; never were paths so narrow and precipitous traversed by me. We travelled on with incredible fatigue and difficulty amid dangerous narrows and tremendous gulfs. Having after a hundred sufferings and losses, at length surmounted these murderous, steep, and narrow defiles, we came down on the confines of Kân (read Fân). Among the mountains of Fân there is a large lake which may be about a *kos* in circumference, and is very beautiful" (*Leyden and Erskine*, p. 85). Pavet de Courteilles' version gives the passage more concisely, and calls the lake a *sher'i* in circuit. I do not know how much that is. Fedchenko says the lake is really about 10 versts (3¼ miles) round.

habitually employ foot-runners, not horsemen, to transmit their communications."

Notes 31, 32.—"There can be no doubt that this was the pass mentioned by Baber: his description agrees perfectly with what I saw in 1870. Our pass bore another title (Mura), but that of Seritag appears to survive in the name of a village now deserted by its inhabitants, because, as we were told, their wheat would not ripen (the height is about 8000 feet).

"Baber's route, however, coincided only in part with that of General Abramoff's party. Before reaching the lake,* near the ruins of Seritag, the traveller (by Baber's route) passes to the left bank of the river, and climbs the hill from which Baber beheld the lake; then, crossing the crest, descends to the river of Pora, and follows its course to Kshtút. The natives still make use of this road; and near the lake we fell in with some people of Panjkand, who had come that way in order to gather brushwood of sorts, which abounds in the vicinity of the lake."

Note 34.—"It is probable that those horrors of the path which Baber pictures are to be found on the southern side; indeed on the T'ian Shan generally† the northern acclivity is found to form a gradual slope, whilst that on the south is precipitous; a fact dependent on the geological structure. But, in spite of all the difficulties, Baber would seem to have got at least a part of his horses and camels across; he only says *some* were unable to pass. That camels should have got across at all is marvellous!"

VII. *The Iron Gates.*

At p. lx of the Essay reference is made to the once famous Pass of Kohlúgha, or the Iron Gate, which I supposed to be on a route not now generally used, and the descriptions of Hwen T'sang and Clavijo are quoted.

Note 42.—"The position of the place so celebrated under the name of the Iron Gate may, I think, be indicated with sufficient precision, although both Hwen T'sang and Clavijo assert that it is the only pass across the mountains which form the southern boundary of the valley of Shahr-sabz. I learned from Jura Beg‡ that there are three routes leading out of the valley besides the main road turning the flank of the mountains, which Colonel Yule mentions.

"The first of these lines runs along the Tenekhas and its tributary the Ulach, and then traverses the pass of Chapok; it debouches at Sar-i-júi, between Dehnáo and Básh-Hissár ... The second line passes near Tash'kurghan and crosses the pass of Kaltamunár. The third, a long way to the west, after crossing the mountains, descends upon Baissun. Now, after attentively reading Hwen T'sang and Clavijo, I can find in no one of the three the famous Pass of the Iron-gates which they describe, but I do find it in the fourth road, which is now called the Arbia. Hwen T'sang's words about the mountains rising to a prodigious height on either side may seem opposed to this view, whilst Clavijo says only 'rise to a great height.' But other passages of both writers support my view (contrary to that of Colonel Yule§) that the actual Arbia route still passes by the former site of the Iron-gates. Thus Hwen T'sang travelled from Kesh [or Shahr-sabz] two days to the south-west, and not till the expiration of these two marches did he enter the mountains. And, in fact, *south-west* is the only possible direction in which one *could* travel two days on a level; on all the other routes from Kesh into the Province of Hissar the very first march carries you into the mountains. Now if you go south-west you cannot avoid falling into the road that I am speaking of. 'There was neither water nor any green thing,' says the Chinese; conditions not possible on the three first lines, which cross lofty mountains, but entirely in accordance with the description I have had of the Arbia road. And, lastly, the circumstance of the two hills rising (as described) on both sides, like walls of rock, between which only a narrow path is left, is only possible among inconsiderable hills rent asunder by longitudinal fissures. There is no such feature to be found in Central Asia or any of the lofty mountain passes.

"The fact that carts now traverse this road cannot be held to be a serious objection. For though Hwen T'sang speaks of the paths up the gorges running along the verge of precipices, Clavijo says the road, though very deep, is smooth, and that the ravine looks as if it had been artificially cut.

"Lastly, it is interesting to observe that to this day one of the stations on this road is called (as I have written it down) Kallug, and that the Iron-gates anciently bore the name of Kuhlug."

Our recent English maps are altogether useless on this question. A route leading from Kesh to Dehinao by the Iron-gate, under the name of Derbend or Kohlúgha appears in the older maps of this century, such as Macartney's map to Elphinstone's *Caubul* and Waddington's map to Erskine's *Baber*;* and in Col. Walker's map of 1868 we still find a route indicated by "Derbendi or Katunga" (the last a clerical error for Kahlúga). But in his last edition I see that, though Derbendi is left in isolation among the mountains, the route has been erased. The version of Fedchenko's map published in *Ocean Highways* of August last, just suffices to show in a vague way the line of road that he speaks of in the preceding note, leading from Guzar (Khozár of Erskine's *Baber*, p. xxxvi, Hisar of Walker 1868, Kuzar of Walker 1873) to Baissún. This part of the map in question, as already explained, does not correctly represent his views or information. I still hope that the revised map, alluded to in the remarks which introduce this paper, may be published; it would probably render this and other matters more intelligible.

VIII. *Mountains called Koh-i-tan or Kuhtan.*

At p. lxi of the Essay it is observed that Burnes applies the name Koh-i-tan to a branch of the mountain mass which divides the basins of the Zarafshán and the Oxus, running down into the latter, whilst Baber seems to apply Kotin or Koh-tan, apparently the same name, to the mass of mountains as a whole.

Note 44.—"To the Kohitan of Burnes and the Kuhten of Baber we must add the forms Kotin-Kuh and Kuyutin-Tau, which I find (to have been introduced) in my map of the Khanat of Kokan, as published by the Geographical Society (of St. Petersburg); and again the name Kohistán has been recently introduced by the members of the Iskander-Kúl Expedition. I fear that all these names will only lead to confusion, similar to that which has already been created by Sarikúl, Serikul, Sárigol, &c., and it would be well for geographers to avoid this. It is in

* *I.e.* from the south.—*Y.*

† Of which M. Fedchenko reckons these mountains to be the south-west extremity.—*Y.*

‡ The ex-chief of Shahr-sabz.

§ The road turning the mountains of which I spoke was that leading from the Oxus ferry at Kilif and Khoja Sálih, over steppe-land, to Karshi. This is certainly not the Arbi Road of which M. Fedchenko speaks. Perhaps this Arbia represents some word *'arabiah* from *'arabah*, implying "cart-road"? See further on.

* Kohlugha occurs in Baber, p. 29.

the highest degree improbable that the mountains north of the Hissar road should be Kotin-Kuh, whilst those south of it are Kuyutin-Tau (*Kuh* and *Tau* alike signifying 'mountain,' one in Persian the other in Turki); and much more likely that both are corruptions of one name. It would be much better to keep to Baber's nomenclature, who probably used the name as he heard it generally used, and to apply the name Kuh-i-Ten to the whole of the mountainous region which embraces the higher part of the Zarafshán Basin, the sources of the Shahr-sabz Rivers, and the northern part of the Hissar territory, instead of the indefinite Kohistán, which merely means 'Highlands.'"

IX. *Termedh.*

Note 45.—". . . . . I have never heard Tarmíza (so it was pronounced) spoken of except as a ruin. There must, however, still be a ferry on the Oxus there. It is nearly midway in longitude between Balkh and Khulm."

If Termedh or Tarmez, that once famous city, is now a ruin, this accounts for what I have noted in the Essay, that we now hear nothing of it; and for its being entirely omitted in the map published under M. Fedchenko's name. In that map Shirábad must be nearly on the site of Termedh.

X. *Province of Hissar.*

On this it was observed in the Essay that we now know no more than the late General Waddington, fifty-six years ago, could learn when compiling his map for Mr. Erskine's *Baber*.

Note 46.—"I can add but little from Russian sources. But this territory is to all appearance very rich and populous. On the Amír's victories over Sari-Khan, in 1869, the Bokhara people said to me, 'We have lost Mian-kal,* but God has given us in exchange the province of Hissar.' Along the southern slopes of the Kohistan there flow several small rivers whose waters are entirely exhausted in irrigation. Of larger rivers we are acquainted with only two; the Tufalan and the Kafirnihán. To the west of the Hissar territory are situated the important towns of Dehnao, Baissún, Shírábád, Saidábád; to the east of it Doshamba and Faizábád; and in the mountains Kurghán Saushít (?), which was the centre of a small independent territory.

"Dehinao is the centre of a small province, distinct from Hissar, and subject to the Amir of Bokhara."

"I was told that the chief town of the province of Hissar was called Básh-Hissár; and Jura Beg informed me that it is quite as large as Uratupah. The southern portion of the province has all the character of a steppe; and in this quarter I know of only two inhabited places, Kurghán Tapah near the confluence of the Surkháb with the Oxus, and Kubádján, not far from that of the Kafirnihán, with the same river. Owing to the unshaded position of the town,‡ planted on a low hill, the heat is there in summer insupportable, and a peculiar disease is generated which they call Tabbat. After violent and hot winds people are attacked with fever; they drink water greedily; the abdomen swells; after several months or years of suffering death ensues. New comers are most liable, but natives are not exempt. Hence, during the summer months, May, June, and July, they go to the hills. At that season a new comer is sure to die, said Jura Beg.

"In the journey of Sidi 'Ali Kátib Rúmi, with which Colonel Yule seems to be unacquainted,* and to which my attention was called by M. Khanikoff, we have a very curious though short account of his passage through the province of Hissar. He traversed it on his way from Badakhshan to Shahr-sabz. Starting from Kshimes,† then the capital of Badakhshan, and passing by Doába and Zafar,‡ he arrived at Rusták, and then crossed the Amu-Darya. Turning eastward, he then entered the province of Khotl (now the Begship of Kuláb), and by Dilli reached Guláb (which we usually call Kuláb). Then, proceeding by Chársú, he came to a bridge; evidently over the Surkháb, and probably the same bridge that is mentioned further on (in the Essay) under the name of Pul-i-sangin," &c.

This last sentence must be due to some error in the German translation of Sidi 'Ali's narrative; for the French version in the *Journal Asiatique* says distinctly that "falling in with the River Pulisangin, we passed the bridge and dismissed our escort" (*J. As.*, 1st S. vol. ix., p. 205). This Pulisangin, or stone bridge, is a very interesting point, to which we shall recur presently.

XI. *Chaghánián.*

The Essay says (p. lxii): "This province (Hissar) in old times bore the name of Chaghánián—perhaps from some tribe of Mongol affinity, which found its way hither in the movements that led to the fall of the Bactrian monarchy;§ and under the Arabic form of Saghánián, it is famous in early Mussulman history and geography."

The term occurs in the narrative of Sidi 'Ali, which was cut short in transcribing the last note. On leaving the bridge he goes to Bazárand, Chihárshamba, and thence "to Chaganián, *i.e.*, to the Fortress of Shádmán."

Note 47.—"The Province of Hissar belonged anciently to the Government of Chaghánián, but, as M. Khanikoff observes to me, the boundaries of this state were much more extensive, and at a certain period even the districts on the left bank of the Amú-darya (Oxus), as far west as Andkhoï, belonged to it (see *Clavijo*, p. 115). It seems to me possible that the southern half of Karategin may have belonged to this state. For the people of Karategin say that anciently their country was termed Yagan (Djagan), and that it is spoken of in history under this name."

The last notice is interesting; but I must express great doubts about M. de Khanikoff's view as to Chaghánián having extended across the Oxus in the 15th century. It requires a great deal more learning than I have to prove a negative in such a case, but my impression is that the use of Chaghánián as a *territorial* appellation had then been long obsolete, and that it survived only as the name of a town or fortress in the province of Hissar. It occurs, as far as I can find, in Baber only on one occasion, and then in this sense (pp. 60, 61); the local adjective comes up oftener in the name of Baber's faithless comrade, Báki Chaghániáni. The passage in Clavijo referred to by M. Khanikoff, speaking of Anchoy (Andkhoï), says: "This city was beyond the land of Media, in a land called Tagiguinea, and the language of the people differed from the Persian." In *Marco Polo* (i., 144) I have expressed the belief that Tagiguinea was Juzgána, a region to which Andkhoï did certainly belong; but though I am not disposed to press that as more than a possible explanation of a difficult word, I cannot think Chaghánián is even so probable.

* Katte-Kurghán?—*Y.*

† This is taken from another note (48).

‡ I understand this to refer to Bash-Hissar; but it is not clear.

* No use is made of it in the Essay under comment, but I have quoted this curious history elsewhere; *e.g. Marco Polo*, ii., 2, and *J. R. As. Soc.*, N. S. vi., 278.—*Y.*

† Kishmis, for Kishm in Western Badakshan the Casem of Marco Polo.—*Y.*

‡ Kila 'Zafar, a famous fortress, often mentioned by Baber, and in the time of his immediate successors. It will be found in my map in the new edition of Wood. Rustak is on the right bank of the Kokcha, below K. Zafar.—*Y.*

§ Referring to the Mongol *Chaghán*, "white."

A great deal of light is wanted both as to the past and present geography of this region, and the first glimmer that we have had comes (to me at least) from these notes of M. Fedchenko's.

Our notions hitherto—chiefly derived from Erskine, whose authority is generally excellent—have been that there was one ancient place called Chaghánián, probably the oldest capital of the region; a second, Hissár Shadmán, somewhat further west, which, in the middle ages, gave the name of Hissar to this province; and a third, Dehinao, which in latter times has been the capital of Hissar.

Now, however, according to Fedchenko, Dehinao is not in Hissar at all, but is the capital of a distinct small state, whilst the capital of Hissar is a place called Básh-Hissár, which may or may not be the Hissár Shadmán of the middle ages. Then again if Sidi 'Ali is to be taken literally, Hissár Shadmán was the same as Chaghánián. Yet in Baber Chaghánián and Hissár are quite distinct, though apparently within a long night's march of each other (see *Baber*, p. 61).

XII.—*Curious Error in Leyden and Erskine's "Baber."*

In gathering stray notices of the climate of the Oxus Basin, a passage in Baber was referred to (p. 131) which represented that wandering prince as taking his seat under the shade of a lofty palm-tree, in the territory of Doshi. This always puzzled me a little, as, even if there are date-trees in the Oxus Basin, Doshi must be a good many feet above the lower levels of that Basin. M. Fedchenko (or should I not here say M. Khanikoff?) observes—

Note 52.—"In the original of *Baber*, published by M. Ilminskikh, at Kazan, the reading is *úlugh chinár*, 'a big *chinár*' or *Platanus orientalis*. I can't guess whence the English translator took the word *palm-tree*. In the French translation of M. Pavet de Courteille, the word is correctly rendered *platane*."

Most probably it was only a printer's or transcriber's error; *palm* and *plane* are not very unlike.

XIII. *Pulisangin (The Stone Bridge.)*

Note 54 is long and discursive in quotation from, and comment upon, the extracts from Ibn Dasta on the Oxus which Sir Henry Rawlinson embodied in his address to the Royal Geographical Society in 1872. I do not translate this note, but I find incidentally mentioned in it that the Stone Bridge over the Surkháb was known to M. Fedchenko, by report, to exist at Narak; "Col. Yule also (he says) mentions the Stone Bridge, and he puts *Pulisangin, i.e.* Stone Bridge, where I put Narak."

It was very satisfactory to find that in my map I had located this famous bridge, from the data solely of old Oriental geographers, historians, and travellers, just where M. Fedchenko places it from recent native itineraries, and without *any* reference to the old authorities. Last year, before being aware from Fedchenko's note that the bridge existed at Norak, I had drawn Major Montgomerie's attention to the importance of fixing this bridge, should any of his *Pundits* travel that way.

If, indeed, reference be made to the map of last August, Narak or Norak will be found in quite a different place, viz., on the Kafirnihán River instead of the Surkháb. But this is not a position given by Fedchenko. He observes—

"On the map of the Khanat of Kokan, Narak has been placed on a river which, lower down, takes the name of Kafirnihán. I cannot tell how that has happened; but it is clearly impossible. There can be no Stone Bridge across such a river as that.

"On the map in question the water-courses are laid down differently from what they were in the original as furnished by me. I do not know the reason of these alterations, but I consider the altered map as far from correct; and in my new map I am laying down the rivers again as they were originally traced." *

In the altered map, Faizábád, which is placed one degree west of the Surkháb, should, I believe, be *near* that river; Norak should be *on* it; Dartkul and Kongurt should be *east* of it. Some of these places are found more correctly placed in Col. Walker's last map.

Further on, where the Essay quotes Istakhri's account of the Pul-i-sangin, M. Fedchenko says again, *Note* 72:—

"The natives, in their narratives, have also told me about this bridge, informing me that there was at Narak a bridge of stone thrown across the river (Surkháb). One of them, Mirza G. Kuna, even described it to me as a surprising sort of a bridge; he said that the river in this place is excessively narrow, and that the bridge abuts on overhanging rocks. However, though the Mirza did tell me that, it is probable that he was merely repeating what he had read in Istakhri."

But, indeed, I prefer to believe that the Mirza was speaking from his own knowledge of this venerable piece of engineering.

XIV. *The Surkháb or Great Northern Contributary to the Oxus.* (See *Essay*, 18).

Note 55.—"Particulars regarding the branches of the Surkháb will be given in the fifth chapter of my journey in the Khanate of Kokan.

"Here I will only say that the Surkháb is formed by several rivers rising in the mountains which enclose the Alaï on the north and south, and that the river which flows eastward probably passes through the Kizilart defile leading to the lake Karakúl. This pass is about 60 versts (40 miles) east of the sanctuary called Kokan Kurghán at Alaï. Swollen by numerous tributaries, the Surkháb has already, at the point where it leaves the Alaï Steppe, the aspect of a considerable body of water. The lowest ford is opposite the sanctuary, and that is found only because the river there is divided into several branches. Lower down, bridges have been established.

"Still further down, and within the Karategin boundary, the Kizil-Sú after uniting with the Múk-Sú receives the contribution of several streams, viz., the Zanku-Sú (or Lai-Sú), the Yarkush, the Gorif, with its affluent the Sangikan, and the Khujankharf.* All these streams come in on the right. Col. Yule's map inserts affluents from the left, under the names of Kaliaï and Ab-i-shor. The first evidently is meant for the Yarkush, for opposite the confluence of that stream, on the left bank of the Surkháb, there is a tomb called Kaleï-Lab-i-áb (Lab-i-áb, signifying 'river bank').† Ab-i-shor is probably a very small stream, which in Abramoff's report is noticed as entering the Surkháb from the left.‡ But, except the Múk, I have heard only one river mentioned as entering it on the left within the Karategin territory, viz., the Khullyas. I do not know its position with any clearness. Muzafar Shah, ex-prince of Karategin, told me it was near Yustyu-yakhák (?); but V. R. Sieroff, Governor of Samarkand, to whom I owe most active assistance, has informed me that the Khullyas flows through Darwáz. As the province of Wakhia, which lies immediately south of Karategin, is subject to Darwaz, I imagine that this river traverses the valley of Wakhia. Whether it is so or not

* Note 72.

* In the Map, of *Ocean Highways*, August 1873, this is called Mujikharf.—*Y.*

† The Kalyai was simply derived from Gen. Abramoff's Report, as translated by Mr. R. Michell, where it appears as on the left. (See *J. R. G. S.*, vol. xli, p. 340.)—*Y.*

‡ This was also derived from the same report.—*Ibid.*

is one of the questions awaiting solution when these mysterious regions shall be explored. It is possible that in Wakhia it receives the name of Wakhsh, and is called Khullyas further down. At a still lower point the Surkháb must receive the Khowalin, which rises in the province of Kuláb.*

"So much was I able to learn about the general course of the Surkháb and its tributaries. Incomplete as these data are, they enable us to lay down the general form of the basin of this northern affluent of the Oxus: and they establish beyond all question that the Surkháb is a great river, in its length of course and copious discharge little inferior to the Panjá itself."

M. Fedchenko, among his many services to geography, has restored to our knowledge this valley or province of Wakhia, which there can, I think, be no doubt is the anciently famous province of Waksh, the name of which is probably intimately connected with that of the great river itself, the Oxus.

Elphinstone indeed had heard of Wakhia as a province in connection with Darwaz,† but in the last edition of his great work, probably from finding Wakhán only, and not Wakhia, mentioned by Burnes, he seems to have accepted the view that Wakhán, Wakhia, and Waksh were all the same territory. Macartney certainly was aware that they were not the same, as he distinctly connects the Panjá with Wakhán, and knew the Wakhia River as a tributary of the Surkháb or Karategin River.‡ "This river," he says, "receives many streams in its course, besides the Suffeekun and Wukheeha Rivers." I cannot tell what river he called the Safikan, but I have not the slightest doubt that this excellent geographer had good reason for using the name, and that it will be found before long. Perhaps it may be that of which we are about to speak.

The Khovalin of Fedchenko is represented by him as running by Baljiwán in Kuláb, and I have a strong impression that the town called Khwáling in Colonel Walker's, and in some earlier maps,§ is really the ame as Baljiwán. Baljiwán we see, according to Fedchenko, is on the Khwaling River; whilst its place closely corresponds to that assigned to the town Khwaling in Abdul Mejid's itinerary; and none of the few routes or route-maps that we have of that region mention both.‖

XV. *Karategin.*

Note 57.—"The roads along the Surkháb must certainly be difficult, but it is not correct to say that they are only passable on foot. On both sides of the river from Dombraz ¶ to Garm there are roads passable for horses. These roads are difficult, no doubt, because at some points the traveller has to cross what are called by the natives *Kíya*, certain *mauvais pas*, where the road shrinks to a narrow path along the rocky and precipitous flank of a mountain overhanging the river. Several of these *Kíya* cannot be crossed at night; and probably when there is ice upon the path the passage of horses becomes impracticable. But one must not believe what has been stated about its being necessary always to traverse these passes on foot, and even by crawling with feet and hands."**

Note 59.—"The Galchas, as has been shown by recent Russian researches, are not a separate race, but merely hill Tájiks, who speak Persian with some provincial peculiarities. Galcha means something like 'poor wretch,'* and is a name that has been bestowed on them by their Tájik brethren who occupy richer territories."

Note 60.—"The prince of the country bears the title *Shá*, evidently the same word as the Persian *Sháh*."

Note 62.—"The upper waters of the minor rivers, and even the Surkháb itself, from Pildán upwards, are exclusively occupied by Kirghiz, a small number of whom live in villages (especially in winter), whilst the rest lead the life of nomads."

Note 64.—"Muzafar Shah informed me that Karategin was anciently called Yagan, and that it is mentioned under this name in the works called the *Tarikh-i-Guzidah* of Hamdalla Mustaufi (14th century) and the *Rawzat us-Safá* of Mirkhond. I do not know if this is to be depended on, but one is struck by the resemblance between this name of Yagan and that of the district of Yagnáu or Yagnáb which is one of the affluents of the Zarafshan and immediately adjoins Karategin. I have before alluded (Note 4) to the resemblance between Yagan (Jagan) and Chaghánián."

From Baber we learn incidentally that a route between Hissár and Ferghana lay through Karategin, probably the same that was travelled by Abdul Mejid on his return from Kokan in 1861.

Note 65.—"There are several such routes; I myself know four passes across the watershed—Tarak,† Aláuddin, Karakazuk, Isfaïram. The last leads by Alaï, but it is made use of as the easiest. It was by this road that Abdul Mejid returned, and also that I visited Alaï. Moreover several lines lead to the Tarak Pass up different glens. The Tarak route is a very difficult one, but has the advantage of being the shortest. By this line the distance between Kokan and Garm in Karategin is scarcely more than 200 versts (133 miles); but it requires at least five days to do it."

Note 66.—"According to Muzafar Shah (the ex-prince), Karategin and Darwaz formerly constituted but one state. After the death of a certain ruler, this was divided between his two sons. Hence, several of the later sovereigns of Karategin made efforts to subdue Darwaz, and in return some princes of Darwaz succeeded in conquering Karategin. In the list of sovereigns of Karategin which Muzafar gave me, I find two called Sháh-i-Darwaz. At the time of the Kokandian invasion, under Mahomed Ali Khan, Karategin was subject to Darwaz, so that the Kokandians had to deal with three brothers, one of whom lived at Khaika, a village near Sokau in Karategin, a second at Garm, and the third at Darwaz."

Note 67.—"At present Karategin is governed by Rahím-Shá, surnamed *Puckuk*, 'cock-nose.'‡ This is a nephew of Muzafar Shá, who dethroned the latter, and I shall tell the story, which is rather complicated, in my book. Muzafar Shá claims direct descent from the line that held Karategin before the division of the territory."

Note 68.—"There can be no doubt that there was a regular campaign of the Kokandian troops, which ended in the conquest of Darwaz and Karategin.

* In another note (69) M. Fedchenko says, "Wakhia is separated from Karategin by mountains with difficult passes; it is watered by a large river, and it has numerous villages, fine gardens, and the sanctuaries of Chibldara, and Tavildara."

† "Wukheeha," as he writes (see *Caubul*, ed. 1839, i., 118; ii., 387).

‡ *Ibid.* ii., 409, 411.

§ *e.g.*, a map of General Monteith's in the R. G. S. map-room, of which I have a tracing. It there appears as Howalin.

‖ Both were introduced in my map of the Upper Oxus; but the conclusion in the text has since then been arrived at.—*Y.*

¶ Dombraz, on M. Fedchenko's map, is at the confluence of the Múk, and the Surkháb, at the very head of Karategin.

** See *J. R. G. S.*, xli., p. 339.

* Presumably Ghalchah, "a villager, a rustic."—*Y.*

† See August number of *Ocean Highways*, 1873, for map. Not to be confounded with the Terek Daban between Kashgar and Andiján.—*Y.*

‡ The word *Pilchigh* in Pavet de Courteille's Dictionary is explained "defiguré par une blessure au nez."—*Y.*

The indigenous rulers were maintained in authority, but acknowledged themselves vassals of Kokan. I have heard the story of the campaign from those who took part in it, who for the most part were not Kirghizes. Darwaz seems to have been the first to renounce obedience to Kokan. The Prince of Karategin acknowledged vassalship up to 1869, when in consequence of the incursions of Sari-Khan, he took refuge in Kokan. Colonel Yule is in error in doubting the reality of the conquest; an English agent, Abdul Mejid, sent to Kokan in 1861, says that Karategin and Darwaz are 'both tributary to Kokan.'"*

XVI. *Confluence of Surkháb and Panja.*

(On a passage in my essay—§. 18—pointing out that we must go back to Macartney for the true position of this confluence, near a place called Kurghan Tapah; all the later maps having misrepresented it).

Note 73.—"I also fell into this mistake when preparing the map of the Khanate of Kokan; but I entirely agree with Colonel Yule that the confluence of the Surkháb is much further north. Several natives assured me also that Kurghan Tépé was near the confluence."

XVII. *The term Sad, for a district.*

Essay p. lxxiv says that Wakhán is divided into four districts, called *Sads* (Hundreds?†):

Note 77.—"I do not know the derivation of the term, but *Sad* is used apparently to designate groups of settlers among all the hill Tájiks. In the valley of the Zarafshán the different districts of Mácha such as Falgar, &c., are termed *Sad*."

XVIII. *Extent of Authority of Badakhshan, &c.*

Note 79.—"Do Roshan and Shugnan,‡ especially the latter, acknowledge the sovereignty of Badakhshan? We have no trustworthy evidence of the fact, and it appears to me doubtful. Perhaps they may have exchanged presents, but that is not in Central Asia a test of dependence. A small power may send presents, and the greater one may of course represent these to his courtiers and to the nation as *tribute*. We know how the Chinese in this fashion came to reckon nearly all Asia as tributary. But Colonel Yule himself has not on such a ground admitted Badakhshan to have been subject to China; and, on the other hand, how long is it since the princes of Balkh ceased to send presents to the Amír of Bokhara?"

And again on my statement of the provinces, sixteen in number, recognized as forming Badakhshan and its dependencies, M. Fedchenko writes:—

Note 84.—"Who so recognizes them? But whencesoever they come, these notices regarding the political state of things are of very doubtful accuracy. I have before observed that the subjection of Shugnan to Badakhshan was more than problematic; and I may add that in regard to Wakhan,* the information collected by the Russians have also shown that it also is free from all dependence, unless we consider as a sign of subjection the transmission of presents to the Amír; and this is rather a matter of exchange, since the latter makes presents in return. Another thing that makes us doubt the accuracy of Colonel Yule's information as to the political constitution which he attributes to Badakhshan is, that with divisions so constituted it would form the most solid political unit in Central Asia; and yet there is no occasion recorded on which the sovereign of Badakhshan has ever made a figure at all."

The statements in detail as to the provinces recognising the superiority of Badakhshan were derived from Pandit Manphul's report, which, brief as it is, is the best information we yet have on Badakhshan. And, as it was penned in 1867, I apprehend that it is entirely unbiassed by any forecast of political questions such as are now mixed up with the boundaries of Badakhshan, and such as underlie my commentator's last remarks, and being facts stated on this, the best accessible authority, without any facts on the other side, they were so recorded. Manphul's statement, as I understand it, represents the *normal* view of things. Whether in any given year the chief of any given province between Peshawar and Samarkand was or was not in rebellion against his liege lord is quite another matter; generally it might be assumed that he was likely to be so. No one ever supposed that the vague understandings of such a bond would be systematically carried out; the strength of the so-called "constitution," which is no phrase used by me, and the degree of unity in the body for action, must depend entirely on the strength for the time of the central authority. The country, it must be remembered, is very small, and the natural divisions difficult.

Of the theoretical recognition of the supremacy of Badakhshan we have old traces. Marco Polo is very precise about the vassalship of the chief of Wakhan to the Lord of Badakhshan; Shighnan he reckons simply as a part of Badakhshan. In the disputes between Kashgar and Badakhshan in Baber's time, both Wakhan and Darwaz claimed the protection of the Khan Mirza, then ruler of Badakhshan, as belonging of right to that country.† In the Chinese accounts of their invasion of Badakhshan last century, we see that they made against the Mír Sultan Sháh a demand for the extradition of the two fugitive Khojas of Kashgar, who "*s'étaient cachés à* Siknan, *situé dans le pays de Badakhchán.*"‡

XIX. *Localities of Salt Mines.*

Note 82.—"The localities in the Basin of the Oxus where I know of mines of rock-salt are (1) at Altinin Dara on the South of Alaï; (2) near Norak on the Surkháb; and (3) in the mountains near Huzar (or Guzar).§ The latter supplies all the Zarafshán country, and is known at Samarkand as Karshi salt."

XX. *Navigation of the Oxus.*

The Essay says, p. lxxxii: "The river is well suited to navigation, and was largely navigated in ancient times."

Note 85.—"Where did the author find his authority for the extent of navigation in ancient times? We have no knowledge of such a fact, and, on the contrary, all the facts lead us to the conclusion that it never was navigated to any continuous extent. On their expeditions Asiatic conquerors have crossed in boats at the most favourable points. This was done by Nadir Shah, but during Timour's wars a bridge was established. This broke after the passage of the troops, and the communication was re-established by boats."

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* I had overlooked this, though quoting Pandit Manphul, as to the subjugation of the two states by Muhammad Ali Khan; and the doubt expressed was based simply on the words of General Abramoff, which declare Karategin to be entirely independent.—(See *J. R. G. S.*, xli., 338.)

† As *Sad* in Persian = 100, the use of *Sad* for a district may have originated in a manner analogous to that of the old English *hundred*, whatever that may have been.

‡ The Russians write *Shugnan*, and in French *Chougnan*; our authorities seem divided between *Shaghnán* and *Shighnán*. —*Y.*

* M. Fedchenko writes Vokhan.
† Erskine's *Baber and Humáyún*, i., 340.
‡ Klaproth, *Mag. Asiatique*, i., 91.
§ South-west of Shahr-sabz.

The authorities for my incidental statement are *Strabo* (xi., 7.3) and *Pliny* (vi., 20), who both speak of the commercial navigation of the Oxus. The expressions are quoted in *Wilson's Ariana*, p. 143, which I refer to as having it at hand.

XXI.—*Ferries on the Oxus.*

Note 86.—"There is a considerable number of these. The greatest number are between the meridians of Khulm and Karshi, which probably indicates that the most important commercial lines lie within those limits. The names of these ferries, from east to west, are as follows:—Termed (this ferry seems also to be called Shiráb);* Búsrobar; Chushka Guzar; Kilif; Khoja Salih; and further down are the famous ferries of Kerki and Charjúi. In the official memorandum of the Russian *chancellerié*, which was printed in the *Times*, Chushka Guzar, is spoken of as opposite to Khoja Salih; but that is impossible: all our information assures us that Khoja Salih is about 100 versts below Chushka Guzar.

"I have been assured that Hazrat Imam, a district on the left bank of the Oxus is under the Amír (of Bokhara). Colonel Yule says nothing of this."

I certainly never heard of such a thing, nor of any fact that could have given rise to such a statement. The only incursion across the Oxus from the Bokhara side that I can find any notice of is the burning of Yangkila' in Badakhshan by the ex-Mír Jahandár Sháh, in the end of 1869.†

XXII. *Conclusion.*

M. Fedchenko, after referring to the Mirza's indications of more than one stream flowing from the lake of Little Pamir or its immediate vicinity, and to some doubts expressed near the end of my Essay, proceeds, with the candour and generosity characteristic of the man:

"Altogether I have had to regret my want of previous acquaintance with what had been written on that region, and my not having set out with all the knowledge already acquired by other explorers. This would have given a more precise direction to the questions which I put to natives, and would have enabled me to concentrate my attention more specially on points still dark and confused. But, in fact, the greatest part of the explorations which have thrown so much light upon the configuration of the southern portion of this region, have only been published since my own journey, or in any case had not before my journey got to Tashkend (such as the accounts of Hayward, Shaw, the Mirza, the Havildar, Faiz Bakhsh). Other sources of information were in great part inaccessible to me, either because written in non-European languages, or because found in rare works, which I have only of late had the power to consult. The present author's sketch is particularly important, both because it enables us to see whereabouts we stand when about to commence actual research, and because it calls our attention incidentally to a variety of complementary questions, or points in express terms to the principal blanks which remain. In the science of Western Europe there exists a very useful custom of resuming and estimating from time to time all that has been acquired up to that point, and by this very *resumé* a stimulus is given to push on the boundaries of knowledge and to fill up its blanks. This would be a good practice for us in Russia to adopt. It certainly must require some resolution to undertake a task with the full sense that it cannot be carried to a satisfactory completion; and our author himself in several parts of his sketch acknowledges how many essential data have still been lacking. In my opinion, that does him more credit than if he had hitched his personal ambition higher, and had waited for the filling up of the most essential gaps; in that case we should have had to wait some years longer for such a sketch.

"Now we see clearly what the blanks in our knowledge are. There remains a tract (of obscurity) extending between 67° and 75° of E. longitude (from Greenwich), with a width of about 2° of latitude in the east, and a little less in the west; it includes the western borders of Alti-Shahr,* Shugnan, Darwaz, Kuláb, Karategin and Hissar. The deepest obscurity is that which hangs over Darwaz and Shugnan; and it is quite possible that actual exploration of these countries will completely alter the contours assigned to them, whether by Col. Yule in his map, or by me in my map of the Khanate of Kokan. It is in view of this uncertainty that I leave the courses of the rivers as drawn by Col. Yule, for I recognize these to be quite as likely as my own. As regards the tracts about Karategin, Hissar, &c., on which I have had more trustworthy sources of knowledge, I have corrected the delineation according to the information I possessed.†

"My actual additions to the Essay have become somewhat lengthy, but I preferred to attach them to it as notes; and, finding that Madame Fedchenko was disposed to translate the Essay, I gave up the idea of giving a general sketch of the Oxus sources—an idea which I had taken up at Tashkend in 1870, and in the execution of which I then wrote several sheets. On making acquaintance with Col. Yule's sketch, I put aside my own commencement, and it seems to me that we do better in presenting the Russian public with the translation of the English work, accompanied by my own supplementary remarks, whilst at the same time we pay a merited compliment to the writer, to whom belongs the honour of having elucidated a number of obscure points in the geography of the Upper Oxus.

"I have by no means introduced in my supplementary remarks all the information collected regarding the upper basin of the Oxus, but I intend to detail it in a special chapter of my *Journey in the Khanate of Kokan* now being prepared for the press. It touches for the most part on Karategin, and in a less degree on Hissar, Kuláb, Darwaz, and Shugnán.

"In conclusion, it is an agreeable duty to mention the important part taken in the translation and notes by M. Khanikoff, who knows Asia so well, both by books and by personal experience. In addition to the fact that his name might justly have been attached to several of the notes, a number of my own remarks have benefited by the essential improvements and additions which he has supplied."

H. YULE.

* Shirab only appears on M. Fedchenko's Kokan map.—*Y.*

† See the *Purl. Correspondence*, Central Asia, No. 2 (1873), pp. 32-34.

* "The Six Cities," formerly the usual name of Kashgaria, and adopted by the Russians.

† This refers again to the revised map formerly alluded to, and still so much desired.

THE RUSSIAN PROVINCE OF AMU DARIA.

IN the second section of the treaty between Russia and Khiva it is stated that the Amu-Daria will form the boundary between the territories of Russia and Khiva, from Kukertli to the point at which the westernmost channel leaves the main river; from this place the line of frontier will follow the western branch of the river to the Aral Sea, and will then be drawn along the shore of that sea to Cape Urgu, beyond which it will pass at the foot of the southern chink of the Ust-Urt along the so-called old bed of the Oxus.

Soon after the conclusion of the treaty, the newly acquired territory was formed into the Province of Amu-Daria, the inner boundary of which will be defined in accordance with a mutual understanding between the governor of the new province and the military governor of the province of Syr-Daria.

The newly incorporated territory includes the former Kizil-Kum region to the sands bordering the Bukan Hills on the north and the Ak-tau Hills on the east. The province is divided into the Shurakhan and Chimbai districts. The Kizil-Kum region having recently been described by A. P. Fedchenko and Horshikin, the following remarks will refer only to that portion of the Khanat of Khiva which has been annexed by Russia.

The new territory includes the whole delta of the Amu-Daria from its westernmost channel flowing into the Aral Sea and the littoral of the right bank to Kukertli.

The river separates into a number of channels at its delta, which, before joining the Aral Sea, form innumerable islets, lakes, and lagoons. Most of these low-lying islands are inundated during the spring floods; they are thickly covered with reeds, interspersed with an occasional clump of juniper, willow, and other trees.

From the eastern shore of the Aral Sea and the banks of the delta, the newly acquired territory is a broad, fertile tract of land as far as the grove of Tugai-Chatli, on the same meridian as the Laudan channel; beyond this, along the northern shore of the same Tugai, lies the sandy desert of Kizil-Kum, which, farther to the eastward, narrows the fertile land as it approaches the river. From Tugai-Chatli the country undulates, and towards the east is hilly, throwing out detached cones of inconsiderable height near the river. Such are the Koshkana-tau on the extreme west, the Bish-Tepeh (5 hills), and the Chilpik opposite the Laudan channel and higher up the river, opposite the towns of Hurlen, Kipchak, and Mangit, the chain of the Sheikh-Jeli Hills and the Sultan Oveis, the former rising abruptly above the river, and the latter situated at a distance of only 20 versts from it, towards the north-east.

Nearer Shurakhan the Sultan Oveis Hills diminish in size, and at length sink in the sandy steppes of the Kizil-Kum which continue along the right hilly bank of the river from Ak-kamish to Fort Usta, in the Khanat of Bokhara, opposite Charjui. In places these sandy elevations recede to a short distance from the river, leaving promontories of low land which are covered with grass, and are mostly inundated during the floods. The inhabitants call these little promontories *Tugai*: the wild poplar is sometimes found on them. The most important of these Tugais along the right bank of the Amu-Daria, from Fort Nukus to Meshekli, are Tugai-Chatli, Tugai-Jan Ghazi-khan, Tugai-Bish-Tepeh, Kipchak, Rahman Verdy Beybazar, Ak-kamish, Kukertli, Bazirgan-Tugai, Zangi-koigan and Meshekli.

There are no small rivers in the province of Amu-Daria. Below Meshekli the river divides into several channels, called Uziaks; the most important of which are Ak-kamish-uziak 40 versts from Shurakhan, Shiman-uziak near Shah-Abbas-Wali, Kok-uziak at Jan Ghazi-khan, Shurkhe or Kiz-Ketkian at Tugai-Chatli, Kuwan Jarma, Kuk-uziak near Fort Nukus, Kara-Baila and Kizim-uziak 20 versts from Chimbai.

Some of these channels form lakes; thus Kok-uziak forms lake Arik-Balik. A small channel near the Sheikh Jeli Hills forms lake Khoja-kul. To these must be added the salt lake of Sultan Sarai, 15 versts from Tugai-Chatli, whence the inhabitants obtain their supply of salt.

Besides the natural channels we have named, there are several large canals for irrigating purposes, viz., the Shurakhan-yab, the Buz-yab, the Uighur-yab, the Naiman-yab and the Khoja-yab, all communicating with the Amu-Daria, and supplying the smaller dykes and aqueducts, by means of which the water is brought to the fields and cottages of the inhabitants. The population of the province of Amu-Daria is partly settled and partly nomad, and in its present tribal divisions has probably occupied the country since the 15th and 16th centuries, except at Shah-Abbas-Wali, where the inhabitants are of more ancient extraction. We are of course referring to the present population of the country, without denying its having been inhabited at a more remote period. It is difficult to say exactly at what time the nomad population first appeared on the right bank of the river, because, according to local traditions, they frequently migrated from one bank to the other. However that may have been, the present inhabitants on the right bank of the river are a young race, and no traces of the aborigines remain. Half the nomad population leads a partially settled life; both nomads and semi-nomads cultivate the soil and rear cattle—chiefly sheep. They are mostly Uzbegs, Kirghizes, Karakalpaks, besides a few Turkmen and Persians; the latter are liberated slaves, some of whom obtained their freedom before the arrival of the Russians, while others were recently set at liberty and settled on the estates of their former masters. According to their own version they number from 3000 to 5000. The Uzbegs belong to different tribes who migrated from the left bank, not having any land of their own there; they inhabit the towns and surrounding huts;* they are agriculturists and gardeners, and number, according to their own account, 6000 houses.

The Kirghizes are estimated at 12,000 to 15,000 kibitkas, and belong to five different tribes. The Karakalpaks also belong to five tribes, and are reckoned at 18,000 to 25,000 kibitkas. The Turkmen number from 1500 to 2000 kibitkas, and belong to the tribes of Arbatchi and Ata. The Karakalpaks are

* There are no villages in this country as there are in Russian Turkistan—the inhabitants live in detached huts surrounded by their fields: the continuous population is only found in the towns.

grouped between Chimbai and the delta of the Amu-Daria. To the north of them, near the Daukarin lakes, are the Kirghiz nomads, who may also be met with at Tugai-Chatli, Jan Ghazi-khan, Khoja-Kul, and at the foot of the Sultan Oveis Mountains.

The Uzbegs inhabit Nakus and Rahman Verdy Bey-bazar and their environs; the Turkmen of the Arbatchi tribe are in the vicinity of the Sultan Oveis Mountains; and the Ata tribe in the district of Shurakhan. We have endeavoured to indicate the chief centres of the different tribes, but it must be understood that they are also met with in other places.

The settled population reside chiefly in the towns of Shurakhan, Shah-Abbas-Wali, Rahman Verdy Bey-bazar, Nukus and Chimbai, and the forts of Jan Ghazy-khan, and Tugai-Chatli, occupied by the semi-nomad Kirghizes. Each of the above places, which may be called towns, is the central market for its surrounding huts. The population of the annexed territory may be roughly estimated at 6000 houses of settled inhabitants, and 37,000 kibitkas of nomads and semi-nomads; in all 43,000 houses and kibitkas, or, taking the usual estimate of five persons per house and kibitka, 215,000 persons, to which must be added 5000 Persians, making a total of 220,000.

As most of the land on the right bank of the Amu-Daria was considered to be the hereditary property of the relatives of the Khan, it was placed under the control of the Divan-begs (governors) or landlords; the nomad population lived on the Khan's land, and each tribe was ruled by its own elder.

Both the hereditary and Khan's land were rented for a payment in kind of the produce of the fields and gardens. The khans of Khiva levied the following taxes:—1. A ziaket on caravans coming from and going to Russia; 2. For the right of trading in the bazaars; 3. A money tax on land, a stipulated part of the produce, a ziaket on cattle, and a tax on all lands leased. The owners of hereditary estates paid no tax to the khans, but exacted payment from all those living on the land. No estimate can be made of the revenue derived by the Khan from the right bank of Amu-Daria, because the only data which we have refer to the income of the whole khanat, and not of any one part.

In attempting to estimate approximately the revenue of the newly annexed territory, we may take as a guide the tax actually levied in Turkistan, viz., 3 roubles per kibitka of nomads, and the payment made by the settled inhabitants prior to the annexation of the right bank, which was proportionate to the extent of their land. Thus the tax on the 37,000 kibitkas of nomads would produce 111,000 roubles, and that on the settled population at a tilla (3 roubles 60 copecks) per house, 21,800 roubles, which, combined with all other taxes, would produce a total annual income of 200,000 roubles (28,000*l.*).

The natural wealth of the new territory consists in land suitable for agricultural purposes: the most fertile districts are those of Shurakhan, Rahman Verdy Bey-bazar and Chimbai. The staple produce is corn, which is grown in sufficient quantities to supply some of the markets on the left bank of the river, and also for export to Kagalinsk in Turkistan. It is said that there are copper and silver mines in the Sheikh Jili Hills, and that during the reign of Muhammad Emin

Khan the ore was smelted, but that owing to a want of skilled labour, the works were closed.

The importance of the right bank of the Amu-Daria in a commercial sense was not great; it served rather as a highway for the caravans from Russian Turkistan, Kokand, and Bokhara, to the chief central markets of the khanat on the left bank of the river. The caravans directed to Khiva crossed the Amu-Daria at Shurakhan, Shah-Abbas-Wali, Rahman Verdy and Nukus; all the caravan routes to the neighbouring countries passed through one or other of these towns; the river way was only used for the trade with Bokhara for a very short period of the year, as it was rendered unsafe by Turkman pirates, and the communication up stream was slow.

In concluding this short sketch of the new province, we should remark that formerly the right bank of the Amu-Daria was not an important part of the Khanat of Khiva owing to its scanty population. The chief centre of the river district was on the left bank, where the principal markets were situated. With the annexation by the Russians of the right bank, a new era of prosperity is anticipated, as the security offered to life and property under Russian rule will attract the trade and develop the resources of the Russian province.

E. DELMAR MORGAN, F.R.G.S.

THE VITI OR FIJI ISLANDS.

IN the Southern Pacific Ocean, between latitudes 15° 30′ and 19° 30′ S., at about 1900 miles to the north-east of Sydney, and 1200 to the north of Auckland, in New Zealand, and nearly on the direct track from Panama to New South Wales, there lies an archipelago of some 312 islands and islets, which has repeatedly come before the public of late years in connection with its incorporation into the British Empire. Viti, or Fiji, as it is called by the neighbouring Tongo islanders, was discovered, in 1646, by Abel Tasman, the great Dutch navigator. It was visited subsequently on many occasions; but for our knowledge concerning the geography of the islands we are indebted principally to the American exploring expedition under Wilkes (1830-42), and to Captain Denham and his officers (1857). Viti has been notorious in former times for the cannibalism of its inhabitants—a habit accounted for by a cynic through the absence of domestic animals, and to which King Thakambau himself, whose X (his mark) has of late figured on so many documents, was formerly addicted. Up to the year 1854 some of the native chiefs kept regular human breeding establishments, and the ovens at Ban were scarcely ever allowed to get cold. But the spirit of Christianity represented there, devoutly if not at all times judiciously, by Wesleyan missionaries, has greatly abated this evil; and cannibalism now flourishes only in the more inaccessible portions of the interior of the islands.

Before we proceed to lay before our readers a succinct history of the events which have led to an offer to Great Britain on the part of the native chiefs to assume the sovereignty over Viti, we would make a few remarks on its geography. The Archipelago of Viti consists, as we have stated above, of about 312 islands, having a total area of 8034 square miles,* which is almost equal to that of Wales. The largest island of the group, Viti-levu, or Big Viti, has an area of 4479 square miles; Vanua-levu, or "Big Land," has an area of 2486 square miles; Taviuna of 214 square miles; Kandavu of 207 square miles; and all the other islands together of 648 square miles.

All these islands are coral-girt, and to the navigator approaching them they appear to be clothed to their very summits with a dense and luxuriant vegetation. All the larger islands are mountainous, the mountains, in the case of Viti-levu, attaining an elevation of 4000 feet. They are of volcanic origin, and although there are no longer any active volcanoes, the existence of old craters and hot springs, the occasional occurrence of earthquakes, and the masses of pumice and ashes found floating occasionally on the sea in their vicinity, all testify that the subterranean forces are not yet quite extinct. There are but few level spots except at the mouths of the larger rivers. The greater part of the surface is undulating or hilly, and the soil, which in many parts consists of a dark red clay or decomposed volcanic rock, thanks to abundant rains, is exceedingly productive. Hardly an acre of land is to be met with that might not be cultivated or converted into pasture. A great difference exists, however, between the windward and leeward sides of the islands, the former enjoying more continuous rains. Dense and extensive forests extend up to the summits of the mountains, and no sooner is a plot abandoned by its cultivator, than the forest reasserts its sovereign sway. But immediately on crossing the mountain range which intercepts the rains, to the leeward side of an island, the aspect of the country changes. We see before us a grassy country, here and there dotted with screw pines. The rivers, however, as they flow outwards to the sea, fertilize the valleys through which they pass. The general physiognomy of the flora is decidedly tropical, that character being imparted to it by tree ferns, branching grasses, palms, scitamineous plants, orchids, and pepperworts. There are, however, entire districts, where acacias, casuarinas, metrosideros, and various creepers recall the flora of Australia. The coast-line of most of the islands is enriched by a dense belt of cocoa-nut plants. Mangrove swamps are limited in extent, and are confined to the mouths of a few of the larger rivers, and to this circumstance is mainly to be ascribed the freedom from intermittent fevers which the islands enjoy.

Amongst the rivers the Wailevu (great water) or river of Rewa, called Peale's River by Wockes, is the most important. It is navigable for a considerable distance, and at its mouth forms a delta of wide extent, exceedingly fertile with pasture lands, capable of supporting four herds of cattle to the acre, and more densely populated than any other part of the island. The tide ascends this river for a distance of 31 miles, and it is navigable for about 30 miles further, the vegetation along its banks, and along those of its tributaries increasing in luxuriance in proportion as we recede from the sea. The European settlers have fully appreciated the importance of this river, for it is here that most of their plantations are met with. The other rivers are comparatively unimportant, though

* Behm's *Geographical Year Book*, vol. I.

nearly all of them are navigable for some distance from the coast, especially during the rainy season; and this, in a country having as yet no roads, is of considera. . importance.

The climate of Viti has been described as one of the finest in the world, but this must be taken *cum grano salis*, considering that the archipelago lies within the tropics, though the assertion of a visitor to the islands, that only a strong constitution can expect to live there, is going too far.* The mean annual temperature amounts probably to 80° F., the thermometer ranging from 60° to 120° F. The heat is tempered by the south-eastern trade-winds, which prevail from April to December, whilst variable winds, mostly from the north and north-west, blow during the rest of the year, generally attended with heavy rains. Hurricanes occur but rarely, but prove disastrous to the plantations. In 1866 two severe storms burst over the entire group of islands, totally destroying the crops of yams and taro, uprooting the cotton plants and laying waste the newly-planted coffee plantations. These storms are all the more disastrous as they are generally succeeded by a long-continued drought, and it is satisfactory to know, under these circumstances, that a storm of equal force had not been felt for twenty years past. Rains fall throughout the year, but are most abundant from October to April. From June to October it is generally more or less dry and cool, though there are many deviations from this rule, according to locality.

The country is said to be exceedingly healthy. Intermittent fevers, which are the scourge of so many tropical regions, are altogether unknown. The only disease which a European settler has to dread is dysentery. It was not known before the arrival of the white man, and is due probably to the too exclusive vegetable diet. The skin and eye diseases from which many of the natives suffer, have been traced to the drinking of "kava," an intoxicating beverage made by chewing the roots of the *Piper methysticum*, to which some of the lower class of Europeans are likewise addicted.

The natural productions of Viti are of the most varied description, and it may justly be said that not only all tropical plants, but likewise many from more temperate regions will succeed there. Most important, probably, in the eyes of England are the prospects of Viti as a cotton-producing country. Cotton has indeed been introduced into Viti many years back, and in Dr. B. Seemann's opinion a country better suited to its growth could hardly be found. It was, however, only after a committee of the Cotton Supply Association had valued samples of Vitian cotton in 1859, at a higher market price than the average of American cotton, that its cultivation was taken up with some spirit. In 1864, 650 cwts. were exported; in 1865, 2400 cwts.; in 1866, 5880 cwts.; in 1867, 30 gins and five steam-engines were employed by the cotton planters; in 1873, 4500 bales, of 350 lbs. each, or about 14,000 cwts. are stated to have been produced; but the quality had deteriorated, and the cotton fetched only from 13*d.* to 22*d.* per lb. in the London market, whilst, had the old quality been kept up, it would have realized from 26*d.* to 28*d.* Direct communications with England are much to be desired if this branch of industry is to be developed, for under the present system the merchants' commissions at Leouka and Sydney amount to no less than 12½ per cent., to which freight and other charges have to be added.*

The mountain districts of Viti, for instance that of Namosi on the Upper Wai-levu, are well adapted to the growth of coffee, and coffee planters from Ceylon who visited the islands some years ago, speak in high terms of it as a coffee-producing country. The cyclone of 1866 destroyed most of the existing coffee plantations, but the injury has been repaired, and Viti, at no distant date, may prove a formidable competitor in the coffee market. The sugar-cane grows wild in many parts of the islands, and its juice is used by the natives for sweetening some of their culinary preparations, though they do not possess the art of making sugar from it. Of late years the European settlers have begun its cultivation seriously, especially on the Lavu Bay, though as recently as 1873 there were no mills to crush the cane. Tobacco is grown in patches near all the native villages, in sufficient quantities to supply the bulk of the population, who are great smokers.

Amongst the plants yielding oils and fat the Niudina, or cocoa-nut palm, is the most valuable. This palm could be planted with small trouble along most parts of the coast, and even at the present time the oil obtained from it by the natives, and paid as their share towards the expenses of the Wesleyan mission, forms no inconsiderable portion of the exports, amounting to from 400 to 700 tons yearly. The bitter oil, or Woondel of Indian commerce, is obtained from the dilo (*Calophyllum inophyllum*, Linn.), which is one of the most common littoral trees in the group, and is highly valued for its medicinal properties. There are, besides, the croton-oil plant, lately imported from the Tonga Islands, but grown only in fences, and the candle-nut (*Alewites triloba*, Forst.), which is exceedingly common, and might be collected in large quantities.

The staple article of food in Viti, as in all Polynesia, is derived from yam, taro (here called Dalo), bananas, plantains, bread-fruit, and cocoa-nut, and of these the yam is valued most highly, though the others grow to equal perfection. So important a part does the yam play in the economy of the islanders that their calendar is regulated by its ripening season. The varieties of this tuber distinguished by the islanders are numerous, and specimens 8 feet long, 100 lbs. in weight, and perfectly mealy, are by no means rare. The *taro* (*Colocasia esculenta*, Schott) is cultivated mostly on dry ground, and in taste has been compared to sea-kale, in shape to a turnip. There are several other aroideous plants furnishing food, amongst which the Diaga (*Amorphophallus*) is the most important. Amongst starch-producing plants, a species of genuine sago-palm (*Cœlococcus vitiensis*, Wende), which Dr. Seemann found growing abundantly in swamps on some of the larger islands, promises to become of the greatest importance. The natives were totally unacquainted with the value of this until Seemann initiated them into the nutritious qualities residing in the trunk. Vitian arrowroot is obtained from two species of Taccu, called Yabia by the natives, and the American cassasa-root has likewise been introduced lately. No cereals have been culti-

* *Colonisation in the Fiji Islands*, by R. U. London, 1871.

* Letter of Messrs. Devitt and Hett, *Times* 15th April, 1874.

vated hitherto, except maize, which is not, however, valued as it ought to be. Amongst the plants used by the natives as vegetables there are but few which an European palate could relish; this is more particularly the case with the vegetables eaten with "bokols," or human flesh, to aid in its digestion. Fortunately a great variety of European vegetables has been introduced. They grow on the coast and would no doubt succeed even better in the interior. The colonist has thus within his reach potatoes, turnips, cabbages, parsley, cucumbers, the tomato, pigeon peas, shalots, sweet potatoes, and a variety of other plants. Nor need he want spices to render his food palatable. The macon supplies him with a kind of cassia bark, which may be used as a substitute for cinnamon; a species of nutmeg grows on the larger islands, on trees 60 to 80 feet in height; turmeric, and a species of ginger abound in the lower districts; bird's eye pepper (capsicum) has become naturalised in all parts of the Archipelago, and vanille likewise is being cultivated successfully. Even a substitute for stick-liquorice is furnished by a species of Dracaena, called mosawe or vasile toga by the natives, the root of which they eat baked, though as yet ignorant of the art of preparing an intoxicating drink from it. But it is chiefly when we consider the large variety of edible fruits that the favoured clime of Viti is brought most strikingly home to us. Bananas and plantains are most highly valued; the bread-fruit grows in regular forests, and at least thirteen specimens of it are cultivated. There are several trees of immense size, bearing a fruit similar to our apples; the fir (*Incarpus edulis*, Forst.) produces the Vitian chestnut; and that of the Tavola (*Terminalia catappa*, Linn.) has been likened to the almond. Tamarinds, the papaw, the guayava, lemons, oranges, and shaddocks, pomegranates, pine-apples, and lemons, all thrive well, and the same is said of the grape vine. The only intoxicating native beverage, called Kava or Yakoma, is prepared from the roots of the *Piper methysticum*, which grows in the greatest perfection at an elevation of 500 to 1000 feet above the sea. The disgusting manner in which this drink is prepared is well known, and its only redeeming quality consists in the fact that, unlike our European spirits, it does not render its partakers quarrelsome. Frequent indulgence in "Kava" entails however, diseases of the skin and the eyes. The Europeans have lately taught the natives how to extract toddy from the unexpanded flowers of the cocoa-nut palm. An infusion of the aromatic leaves of the matrada (*Missiesya corymbulosa*, Wedd.) is drunk by the Europeans as a substitue for Chinese tea.

The wood and bark of several trees are used to perfume the cocoa-nut oil with which the natives anoint their bodies. The sandalwood, which is confined to the south-western part of Vanua levu formed at one time the most valuable article of export, but even as long ago as 1816 scarcely enough was left for home consumption, and when Wilkes visited the islands about 1840, a few specimens for the herbarium could be procured only with difficulty.

The fibres of the malo or paper mulberry are manufactured by the native women into cloth, which is sometimes dyed with the juice of the Lauthi (*Aleurites triloba*, Forster). The screw-pines furnish materials for mats, and other trees for cordage.

Timber of excellent quality, both for house and ship-building, abounds. Most highly valued is the Dakna (*Dammara vitiensis*), the Fijian kowrie-pine, which grows to a height of 100 feet, and 4 feet above the ground has a girth of 18 feet. It is used for masts and spars, but its supplies are beginning to fail. There are, however, other cone-bearing trees, suited for similar purposes, besides the Damanu (*Calophylum Burmanni*, Wight) and several others. The Nokonoko (a casuarina species) furnishes a wood distinguished for its hardness; whilst the Dilo (*Calophylum inophyllum*, Linn.) is highly valued for its beautiful grain, and takes a fine polish. For covering the side walls of their houses the natives make use of the leaves of the sugar cane, of a screw-pine, of the boreti (a sea-fern) or of the makita (*Parinarium laurinum*). There are many other trees highly valuable as timber, and some of them yield gums, whilst others supply a sap used for dying purposes.*

A striking contrast to the variety and luxuriance of the vegetable world of Viti is offered by its fauna. The only domesticated animals kept by the natives are the pig, the dog, and fowls. European settlers have lately introduced the sheep; and although several flocks have been carried off by a disease, the nature of which has not yet been made out, there is some prospect of this useful animal becoming acclimatized. Wool, at all events, forms already one of the articles of export. Horned cattle has not as yet been introduced, and Australian beef and mutton form the staple of food at the European hotels at Levuka. Amongst other quadrupeds the rat is perhaps the most important and numerous. There are few birds, parrots being the most common. Amongst reptiles we meet with lizards and frogs—the latter a favourite article of food with the natives, who, as a rule, do not disdain to eat any kind of animal. The gigantic *Macrotoma heros*, some ten inches in length, is the most remarkable representative of the insect world, though ants and mosquitoes are far more troublesome. The macrotoma, like some smaller beetles, is roasted by the natives and eaten. Far more numerous than these land animals are the inhabitants of the sea and rivers. In the latter fish abound, and, strange to say, several species, such as the shark and lethrinus, which are not generally supposed to live in fresh water. The Trepang, or Beche de Mer fisheries are carried on with some vigour along the northern coast of Vanua levu, and some 300 to 500 piculs, of 140 lbs. each, are annually exported to China, where that rather repulsive looking animal is looked upon as an Aphrodisiacum. Tortoise-shell is plentiful, and if the indolence of the natives could be overcome, might furnish an important article of commerce.

Our knowledge of the mineral resources of Viti is still very scanty. Copper and antimony are said to exist, and clay of very superior quality is used by the natives in the manufacture of their pottery.

Taking into account the vast natural resources of the Viti Islands and the great variety of their produce, it must be admitted that their export trade has hitherto been but insignificant. The value of exports in 1864 amounted to 19,800*l.*; in 1867 it had risen to 39,960*l.*; and at the present time it is perhaps three times that

* For a full and interesting account of the vegetable productions of Viti, we must refer our readers to Dr. B. Seemann's exhaustive report published in the "*Fiji Islands*" *Blue Book* in 1862.

amount. Cotton, cocoa-nut oil, tortoise-shell, beche de mer and wool constitute the principal articles of export, whilst the imports embrace Manchester goods, ironmongery, and cutlery, wine, beer, and spirits, groceries, ship-chandlery, wearing apparel, tobacco, and agricultural implements. Trade is facilitated by the numerous excellent harbours and roadsteads of the islands, amongst which that of Levuka, which is easy of access, has good holding ground, and offers every facility for the supply of fruit, vegetables, wood, and water, is the most important. This harbour has lately been provided with a light-house.

The inhabitants of Viti are for the most part Melanesians, and, like the natives of New Guinea, they are dark complexioned and have long woolly hair, which the missionaries, however, compel them to cut short wherever their influence reaches. It is, however, only in the interior that this original type is still met with. Along the coasts an admixture with the Polynesian Tonga islanders has taken place, which has left its mark not only upon the physical character and the language of the inhabitants, but has likewise influenced their manners, customs, and political institutions. The intercourse with the Tonga islanders still continues, one of their chiefs has gained possession of the Windward Islands (his residence being on Lakemba), and in his character of "Viceroy" of Viti, he exercises considerable influence in the rest of the group.

The character of the Vitians offers many contrasts. Superior in intelligence to all other Melanesians, they are warlike without being chivalrous, and in their continuous internecine contentions they have occasionally exhibited an amount of cruelty not probably to be matched in any other part of the world. But Mr. Consul Pritchard describes them in the most favourable terms. According to him they have broad and open chests, sinewy arms and legs, stout limbs, and great muscular strength. They are active and ingenious, and not devoid of tact. Under proper management they are docile and tractable. They will work if the produce of their labour can be secured to them, and this, Mr. Pritchard considers, is one of the great inducements offered for colonizing Viti. His estimate, however, is not supported by other authorities, who describe the natives as being exceedingly indolent and averse to continued labour, which they look upon as degrading. Major Eggerström exaggerates perhaps when he tells us (in 1863) that the natives who have abandoned heathenism spend their time in idleness, whilst the heathens continue to kill and eat one another. This much is certain, that the European planters felt compelled to look to other islands in order to procure labourers to till their fields. About one-third of the natives are supposed to be Christians, and a considerable portion of the remainder have abandoned their idolatrous habits, without attaching themselves to any Church. The Wesleyans, who first came to Viti in 1835, have made most converts, but the Roman Catholic priests, whose operations date from 1846, are likewise said to have met with considerable success, due, in a large measure, to the indulgence with which they look upon the innocent recreations and pastimes of the people. The Missions are supported in part by voluntary offerings of cocoa-nut oil made by the natives.

We need hardly state that no census of the native population has been taken hitherto, and the estimates respecting their numbers differ widely. Gaimard (1827) estimates the native population at 70,000; Erskine, trusting to information furnished by the missionaries (1849), makes it 300,000. These are the extremes. Wilkes, about 1840, estimates the number of inhabitants at 133,500; Pritchard and Smythe (1861) at 200,000; J. B. Thurston (1867) at only 100,000; Britton (1870) at 130,000. From an estimate published in the *Fiji Gazette*, we learn that the native population on the 31st December, 1871, amounted to 146,000 souls, of whom 70,000 lived on Viti-levu, 33,000 on Vanua-levu, and 43,000 on the smaller islands. This latter statement appears to be deserving of most credit. In considering the future of these islands it is of some importance to know that the native population is steadily decreasing. The wars constantly carried on by the native tribes, and attended by indiscriminate slaughter, will, in some measure, account for this decrease. Mr. Thurston, moreover, states that in 1867 there died in three towns as many as 128 souls, whilst the number of births did not exceed 14, and that Ovalau, which comes more immediately under the observation of European residents, was capable in former times of sending out 3000 fighting men, whilst now it can muster hardly 300, old men and lads included. The gradual extinction of the native population is proved moreover by the many ruined villages and deserted plantations which meet the traveller in the interior at every step.

Assuming the estimate of the native population, as given in the *Fiji Gazette*, to be correct, and adding the 2140 whites, it would appear that the mean density of the population is 18 to a square mile. The population would appear to be most dense on the smaller islands (41 to a square mile), whilst on Viti-levu there live 16, on Vanua-levu only 12 souls to a square mile. There is no doubt that the islands are capable of supporting ten times their present population, or about a million and a half of inhabitants.

The second element in the population of Viti, and in some respects the most important, is formed by the white planters and their descendants born of native women. Prior to the arrival of the missionaries only about four or five whites resided upon the islands, and up to 1856 their number did not exceed fifty, most of whom were engaged in trafficking between the islands, making use for that purpose of some fifteen decked boats built by themselves, and having a capacity of from 3 to 15 tons. On the appointment of a British Consul in 1859, the islands begun to attract some attention, and a number of white settlers were attracted thither. In 1867 there were already 400 whites; in the following year they had increased to 449, in addition to whom there were 276 half-castes. At that time the white settlers had already purchased from native chiefs 235,000 acres of land, only a small portion of which was however under cultivation. On the 31st December, 1870, there were 2040 whites, of whom 450 resided on Viti-levu, 500 on Vatua-levu, and 1090 on the smaller islands. Levuka still remains the seat of commerce, but the white settlers have spread over the whole of the islands. On Viti-levu their principal centre is the delta and along the banks of the Wai-levu River, the frontage of which they have acquired for a considerable distance into the interior. They have likewise settlements on Savu Bay, at Nadrouga, at Ba, and other places. The chief settlements on Vanua-

Map of the
VITI OR FIJI ISLANDS.

principally from Surveys and Explorations by
COMd WILKES, U.S.N. CAPT. H.N. DENHAM, R.N. 1857,
COL. W.S.SMYTHE, B. SEEMANN, E.GRAEFFE & OTHERS;
by E. G. Ravenstein.

Scale 1 : 1,200,000.

0 10 20 30 40 50 Nautical Miles
0 10 20 30 40 50 Statute Miles

Altitudes in feet, Soundings in Fathoms.
Coral Reefs.

177° 178° 179° 180°

16° 17° 18° 19°

Thikombia
Vanua Levu
Dakuiwaqa
Mathuata
Nivuera
Yaqaga (Angaga)
Vatuna (Sail Rk)
Vatu Huka R.
Yadua
Nakaigandrau
Yadua tabu
Porpoise R.
Dimbadimba
Sandalwood R.
Lekamba
Alewakalo Pas.
Alewakalo (Round I.)
Timboon
Asaua
Kinsilk I.
Kawakawa
Yauthaka
Yasawa
Ethel R.
Sawailau (Asawailau)
Drola (Nuhoulla)
Nauia
Yageta (Vangata)
Viwa (Biwa)
NAVITI
Full of Coral patches
Fox I.
Egbert I.
Agate I.
Sinclair I.
Waya 1641
Waya lailai
White Rocks
Baldwin
Thurston
Tottan
House I.
Castle Rk
Vame
Hudson Is.
Walker I.
Carr I.
Johnson I.
Alden I.
Emmanuel
Underwood Gr.
Perry I.
Rabori
Malolo
Suatlib
Waldron I.
Spriden I.
Malolo Ba
Nandala Ba
Nandala Pt
Liku
Singatoka R.
Nandi
Yaqona
Vaturu
Nandarivatu
Mt Evans
Mt Koroyanitu
Mt Mba
Mt Nandarivatu
Mt Tomanivi
Mt Victoria
Mt Washington
Mt Seatura
Mt Tuvutuvu
Mt Uluisaqalevu
Mt Vatuvonu
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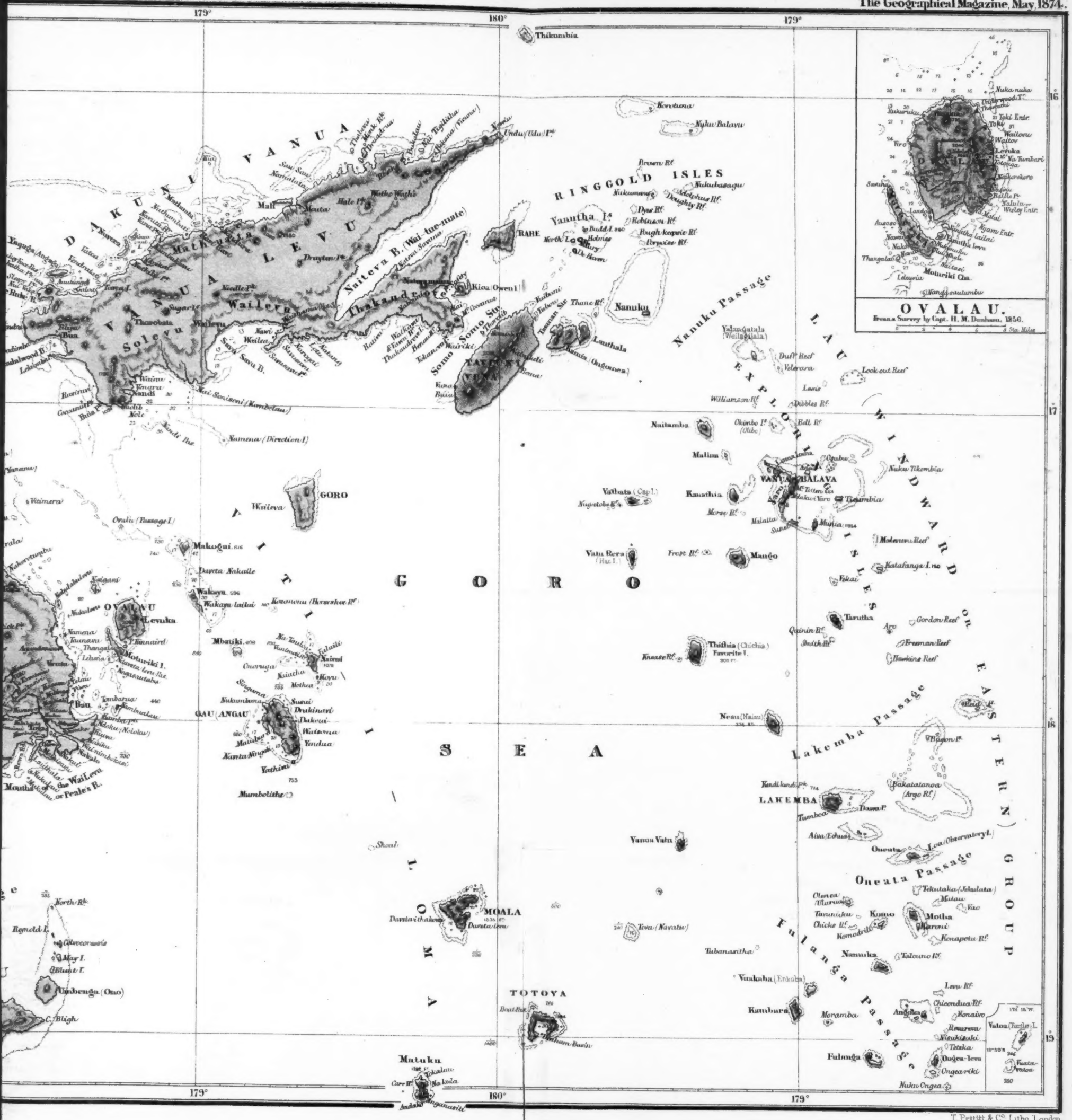

T. Pettitt & Co. Litho, London.

levu are at Nandi and in the district of Thakandrova. Fine plantations have been established at Somosomo, on Taviuna, and on several of the smaller islands. Most of the whites are British subjects from the Australian Colonies; but there are also Americans and Germans, and a few individuals belonging to other European nations. As might naturally be expected there are amongst them not a few whose antecedents could not bear too strict a scrutiny. But thus it has been in many newly-settled countries; and on the establishment of a firm and regular government, the class of immigrants will no doubt improve, though even now there are amongst them not a few men of the highest respectability. If we are to credit R. U., who is too much inclined to look at the black side of things, the position of the planters is by no means an enviable one. "Always something will occur to destroy the crops—hurricane, blight, wet, or drought. Men with little capital must be content to live a sort of animal existence, away from all civilization. Their diet yams and salt meat, and the latter only when it can be kept from the flies." R. U. appears to forget that the question of diet rests entirely with the planter, and that no climate, even the most favoured, is exempt from vicissitudes which destroy the labours of the husbandman.

One of the chief difficulties with which planters had to contend was the difficulty of procuring labourers. The natives exhibited but small inclination to regular work, and hence sprung up the importation of labourers from the Hebrides and other islands of the Pacific, by means of which a third element was added to the population. We learn from a Parliamentary paper, that since the commencement of this immigration movement, up to the close of 1869, there arrived at the Viti Islands 1649 labourers, of whom 292 returned to their homes, 18 absconded, and 52 died, there thus remaining 1287 at the end of the period. These labourers are engaged generally for three years. Their wages amount to 2*l.* or 3*l.* a year, generally paid in merchandise, and they are fed on yams, taro, maize, and other vegetable food, with an occasional ration of pork. At the expiration of their term of service they must be conveyed back to their homes free of expense. There is no doubt that this labour traffic has given rise to numerous irregularities; but we agree with Mr. March that the importation of labourers is not objectionable, as long as kidnapping can be prevented, and their fair treatment ensured whilst they are at work on the islands.

In conclusion we will succinctly trace those events which have led to repeated offers being made to Great Britain to assume the sovereignty of the Viti Islands. They may all be traced to the accidental burning of the house of the American Consul in 1849, when several articles of furniture are alleged to have been stolen by natives attracted to the spot, and to losses suffered by other American citizens during the burning of Levuka by a native force. Commodore Boutwell was sent to the islands to enforce compensation; in 1855, he awarded $38,500 and to save himself the trouble of collecting so large a sum amongst a number of chiefs, he made Thakambau, the chief of Bau, responsible for the payment, thus investing him with a fictitious importance which his position as one of many independent chiefs did not entitle him to. The Wesleyan missionaries considered the award extortionate, but Commodore Boutwell was not to be induced by their remonstrances to moderate his demand, but, on the contrary, he arbitrarily raised it to 45,000$, with interest at the rate of 8 per cent. until it should be paid.* Hence was Viti saddled with a heavy debt, the payment of which caused no small trouble to its chiefs. The first event to which it led was the election of Thakambau to the dignity of "Tui Viti" or king of Viti, in which capacity, however, only a small number of the chiefs acknowledged him, whilst the whites ignored his authority altogether. Mr. Pritchard, who had been appointed British Consul to Viti, arrived there in 1857, and on the 14th of October of the following year the king and chiefs signed an Act of Cession, which the Consul lost no time in carrying personally to London. By this Act the "king" ceded Viti in full, in consideration of Great Britain discharging his debt to the United States, allowing him to retain the title of Tui Viti, and placing him at the head of native affairs. He likewise ceded 200,000 acres of fertile land. When Pritchard returned to Viti, in 1859, the king voluntarily conferred upon him the jurisdiction over all British subjects residing in his dominions, and on the 17th of December, 1859, he placed in his hands the whole government of the country, to be carried on "according to the broad and plain principles of justice and morality." Pritchard provisionally accepted these offices, and in the colonial papers he held out inducements to intending immigrants. But the Home Government, rendered timid by the Maori war then raging in New Zealand, felt little inclination to accept the proffered cession. They deputed, however, Colonel W. S. Smythe to report upon the condition of the islands. Colonel Smythe reached Levuka in July, 1860, and, partly accompanied by Dr. B. Seeman, the botanist, and by Mr. Pritchard, he made a tour of the principal islands. He found that Thakambau was acknowledged only by a minority of the chiefs, but that even those chiefs who held aloof from him, were anxious to be placed under British rule, which would be able to protect them against the aggressions of other powers, notably of the United States. Dr. Seemann, whose account of the natural resources of these islands is most valuable, appears to have been strongly in favour of annexation—not so Colonel Smythe, whose reasons for a contrary course we are not able to gather. The Government, however, acted on the advice of the latter, and Captain Jenkins, of H.M.S 'Miranda,' was deputed in 1862 to inform the king and other signatories of the Act of Cession, that the Queen declined to assume the sovereignty over the Viti Islands.

King Thakambau was thus thrown back upon his own resources in discharging his debt to the United States; and willingly he listened to the propositions of the representatives of a "Polynesian Company," started at Melbourne, who came to his residence in 1868, and promised, in return for certain privileges, to discharge his debt, and to grant him an annuity of 200*l.* to boot. A charter

* The Wesleyan missionaries were not alone in remonstrating against the extortionate character of Boutwell's award—for the superior American naval officer on the station, as well as other respectable Americans, supported them. Consul Williams, whose losses were valued by himself at 5001$ 35c., in the end received 18,331$.* The claim must appear all the more unjust as Thakambau at that time exercised no authority whatever at Levuka.

signed on the 23rd July, 1868, without the privity of the British Consul, or of the Commodore, conveyed to the company 200,000 acres of land; empowered it to make laws for all settlers on such lands, native or foreign; to regulate the customs and trade of the entire "kingdom"; to establish banks, and issue notes. The representatives of the company were however informed that they could not reckon upon the support of the British Government in enforcing the unprecedented privileges conferred upon them, and it was pointed out to them that Thakambau's authority only extended over a small portion of the islands, and that several tracts ceded would first have to be taken by him by force of arms. The company, however, paid the demands of the United States. They issued a prospectus representing Viti in the most roseate hues, and succeeded in attracting a number of immigrants. In the end, however, they collapsed, and none of their fine schemes have been realized.

In 1869 Mr. Hoskins Drew gave the Viti Islands a constitution, modelled upon that of the mother country. There were to be two Houses of Parliament, one of whites, the other of natives; and no law was to be enforced except it was sanctioned by the two houses and the king—*tous comme chez nous*. There were ministers of state, a supreme court, county courts, and all the parapharnalia of a civilised government. In the same year a hundred white settlers, with the approval of the king, asked the President of the United States to assume a Protectorate over the islands. But he too declined; and 37 white settlers then published a manifesto in which they called upon their fellow-whites to organise themselves as an independent community. The number of whites at that time is stated to have been 2300, of whom about 1000 were respectable men, who might be trusted with the formation of a Government. A large preponderance of the natives, it was believed, would readily acknowledge the new power, whilst the remainder could easily be kept in check by a body of fifty well-armed men. It is probably in consequence of this movement that the king was induced, on 21st November, 1870, to empower the European settlers at Levuka to form a body corporate for governing the town, and to levy rates and taxes for that purpose.

In the following year a fresh "constitution" was published and sanctioned by Government. The Australian authorities—who at no time exhibited the most cordial feelings towards these Vitian "Governments," but were most anxious that the sovereingty over the islands should be assumed by Great Britain—had to be remonstrated with on several occasions by the home authorities, and they were instructed to treat the Government, exercised by the settlers in the name of King Thakambau, as existing *de facto*. Similar instructions were issued to Commodore Stirling, commanding the Australian squadron.

The planters at first supported the new rule, but no sooner were taxes levied upon them, than they turned against it. Mr. Woods, one of the Vitian Ministers, who was at Sydney in February, 1872, for the purpose of raising a loan (in which he succeeded), purchasing a steamer, and bringing to maturity several other schemes of a financial nature, sadly complains of the refractory action of a few whites, who were aided and abetted in their conduct by Mr. Consul March, who had, moreover, directed masters of British merchant vessels not to pay harbour-dues, and who, on all occasions, treated his sable majesty's ministers with contumely, and the decisions of his supreme court of justice with disrespect. The white settlers on Viti had not been idle in the meantime, and on the 1st of March, 1872, they published a "Declaration of Freedom," in which they protest against the usurpation of power by a few British subjects, having an impotent native chief as their nominal ruler at their head, and pledge themselves to resist the collection of taxes. Later in the same year (22nd of November, 1872) the settlers at Ba, Nandi, and Nadronga formally seceded from the Vitian Government, and the former offered resistance to the advances of a Vitian force which was sent to their district in order to avenge the death of a farmer, who had been murdered by the mountaineers, together with his family and twenty labourers.

Captain Chapman of H.M.S. 'Dido' succeeded in restoring peace, though unable to allay the general discontent of the whites with existing institutions. In a memoir published by the Ba settlers on the 19th of March, 1873, they point out the incapacity of Rakumba's government, the reckless management of the finances by his ministers, and the inefficient administration of justice; and although the picture of maladministration which they unfolded may have been overdrawn, there yet remains the fact, that a *modus vivendi* had not been established through Captain Chapman's interference. The discontent found expression in the Vitian Parliament. Fresh elections were ordered by the ministers in June 1873, but as these likewise went against the government, the ministers advised the king that a despotic rule alone was suited to the country. A fresh "constitution" was published in September of the same year; the ministers appointed themselves for life, and, aided by a consultative council of whites and natives, they assayed to rule the country. But they failed lamentably. The planters refused the payment of all taxes; and had it not been for the presence of English men-of-war, open hostilities, attended by bloodshed, would have broken out. The resistance offered proved too strong in the end; the ministers resigned, and placed their powers in the hands of the English, American, and German consuls. Some idea of the mismanagement of the Vitian finances may be gathered from the fact that the debts contracted in the course of two or three years amounted at the close of 1873 to 75,000*l*., that the ministers who had been authorised by Parliament to expend 89,000*l*. actually expended 120,000*l*., and that the revenue raised in a single year, amounted to so large a sum as 45,000*l*., most of which was obtained from customs duty.

In the meantime, in January 1873, Mr. Thurston, Chief Secretary of State of the Vitian Government, had addressed a renewed offer of cession to the British Government, which has not yet been rejected. On the contrary, it has led to the appointment of Captain James Goodenough and Mr. E. L. Layard, the present Consul in Viti, as Commissioners, to report upon the feasibility of the government of the islands being assumed by Great Britain. On the 16th of January of the present year, the Commissioners visited the king at Bau, when they explained to him the results which annexation would entail. They stated that Great Britain had no

desire to acquire the sovereignty over Viti except by the express desire and consent of its chiefs and inhabitants, and pointed out the benefits which British rule has conferred upon other islands like Viti, now forming part of her colonial empire. The king appeared to be perfectly resigned to his loss of authority, but pleaded that he should be allowed to retain his title of "Tui Viti." Subsequently the Commissioners visited the various plantations on Viti-levu. They found that the planters were unanimously in favour of annexation, and quite willing to undertake the settlement of all outstanding liabilities, including the land grant made to the Polynesia Company. On their return to Bau the Commissioners had a satisfactory interview with Maafu, the Tonga chief and Viceroy of Viti, whose dominions (the Windward Islands) they were about to visit when the last advices left Levuka (10th February, 1874).

Our task is accomplished. We have endeavoured to convey within a small compass some information concerning one of the most favoured island groups in the Pacific, the enrolment of which amongst the British Colonies sound policy demands. Even now our newspapers are teeming with articles on Viti or Fiji; fresh information may be expected from day to day; our knowledge of the past and present condition of these islands will no doubt be enlarged, and if erroneous statements have been made by us from want of more precise information they will be rectified. Yet the map with which we present our readers will prove of service for some time to come. It will enable them to follow current events, and impart information not to be conveyed by mere type and ink.

E. G. RAVENSTEIN.

"MY PARENTAGE AND EARLY CAREER AS A SLAVE."

SURROUNDED by beautiful mountain scenery, and situated between Darfur and Kordofan, under the jurisdiction of Muhammad Ali, the Pacha of Egypt who first conquered the town, is a small valley, or rather plateau, in the mountains, named Jebel Tegeley. As near as I can recollect, the valley of Tegeley might be about 14 to 16 miles in length by 6 to 7 broad, and it boasted of five villages at the period of my being taken away from my country. Two of these round-hutted, mud-thatched settlements, belonged to my family; and all five were subject to Chammaroo, the prince who exercised despotic sway over the inhabitants of our valley. My uncle was one of Chammaroo's warriors, and my eldest sister acted as nurse to the royal children. I dearly loved my father, who showered upon me such unmistakable signs of paternal affection that his partiality towards me created an ill feeling against me on the part of my mother. Her conjugal regard for my father was not of the highest stamp, so that I frequently came in for a scolding intended for my father, and frequently a slapping for myself. The first thing I remember in life was when I observed a little brat at my mother's breast. I must have been somewhat over two years of age at that time; for be it understood we African children are permitted to enjoy the sweetness of our mother's milk for eighteen months or two years, and during that period the mother never thinks of nursing another child till the last one is perfectly strong and able to walk about. The next, and the then youngest brother, barefacedly encroached upon what I considered my supreme prerogative. My mother appeared to hold him close to her bosom, and my aunt (I have forgotten all their names), with our friends and other relatives, were laughing and congratulating my mother for what under the skies I could not tell. I looked and looked again at the little naked thing till I became jealous of the preference shown to him, and from that day I plead guilty to hating the little usurper. I grew up, and through my uncle's influence I became a little lord in waiting to Prince Chammaroo's children, the eldest of whom showed me the greatest kindness. One of the little princesses also took a great fancy to me; but I disliked her because she was minus her hair on the whole of one side of her head, and at the time there was no perruquier in Tegeley to rectify the defect. The history of this want must be told. It was no freak of nature, but the result of an accident, which even now makes my flesh creep and my blood run cold at the thought.

Amongst the many beasts that inhabit the jungle in the neighbourhood of our valley, the lion is the king of the forest. It was seldom that these animals made their appearance during the day, but the moment that the shades of night began to overshadow us, the roar of these dreaded animals might be heard for miles as they issued forth from their dens to hunt up their prey. In their nocturnal prowlings these beasts often approached and frequently entered the villages, and woe was their fate whose house doors were loosely fastened, or the curs that happened to fall asleep in the "middle watch." On came the lions one night, and, as bad luck would have it, they found one of the doors of Prince Chammaroo's palace badly secured. The air was very sultry, and the whole family, including the prince, were sound asleep in the open courtyard. A lion, said to have been an old offender, cautiously entered the courtyard and seized the princess, who was then lying by her mother's side, seized her by the hair of the head, and immediately commenced dragging her away. The mother awoke and jumped up, the child screamed, and so terribly, that the prince instinctively clutched his sword and ran towards the door. By the assistance of a bright intertropical moon, he saw the lion dragging away his offspring, the child of his affections. The prince redoubled his speed, and, as the burden was rather heavy, the king of the forest was overtaken by the king of the homestead, and then followed a dreadful struggle for victory. The prince held his daughter by the legs, and tried to pull her away from the lion. The lion refused to let go his hold, and dragged both prince and child after him; the poor girl still screaming lustily. One, two, three, four, five, six, and more cuts with the sword on the lion's back, and at last the prince found himself with his child lying speechless and bleeding on the ground. Chammaroo took up the girl and ran back with her to the palace: on examining her they found that the lion had carried off one half of the hairy scalp. The wound healed up, but the hair never grew again, and hence my dislike to that unfortunate but very plain being.

At about the age of six years my father took me

from court and made me a shepherd: every morning at sunrise I was seen opening the sheep-fold to let out the sheep and goats. One old ram used to lead the van, for the pasture grounds were well known to the veteran; and I reserved another to ride upon, the better to follow up the rear. On my way, I usually met two other boys from the neighbouring villages, with their father's flocks, and by mutual agreement mixed our animals together and took our stations on the pasture ground to prevent them from losing themselves in the bush. At even-tide the voice of every shepherd called his flocks, and they separated into three lots, each following its guardian to the fold.

Being the oldest of the boys, my pride was raised to no small degree when I beheld my father preparing a farm for me. This event filled my mind with grand anticipations of leaving the care of the flocks to my next brother, who was then beginning to work a little. Manhood, a landed proprietorship, a house, a wife to cook for me, herds of goats, flocks of sheep, and other items which constitute gentility in Central Africa, all floated before my mind's eye; but I was never destined to enjoy the charms of a settled and independent life. While tending our flocks between two hills, we espied two men making their way towards us. The foremost saluted us by asking a question quite common in the country,—"Have you any goats for us?" We answered, "No"; but I soon discovered the ruse that the villains had practised; for as soon as they came close to me, our would-be amicable strangers seized me firmly by the hand and pulled me away whether I would or not. I screamed, I roared, I fell down on the ground, but all to no purpose. We were too far away from our homes, the sun was setting, and, to facilitate my stubborn and lagging movements, one of the kidnappers procured a green switch and applied it very tellingly to my legs and their origins till they were all cut and bleeding. Late at night we reached a few farm-houses, and here, without even getting a drink of water, I was tied hands and feet and laid on the bare ground to rest. I cried all night, and before day dawn on the following morning the slave-catchers aroused me, and taking the ropes off my legs, forthwith commenced a march still further away from my home.

I was now a slave beyond a doubt. From being a companion of princes, I had dwindled away into a thing to be bartered for, to be bought, to be sold at the pleasure of another man. My dear father was far away from me, and I had no relative or friends to sympathise with me in my luckless destiny. I was distracted, especially when I observed my pursuer coming after me with a large hippopotamus-hide whip, and a sword slung on his shoulder. At noon we reached an Arab village of large dimensions, and went straight to the chief's house, where a long interview ensued in a language quite unknown to me. What arrangement had been entered into I could not tell, but at any rate I was sold. The ruffian who had kidnapped me went away, and I never saw him again, nor, alas! have my eyes ever since fallen upon parent, family, or friend of my youth.

On entering the house of my new master I was agreeably surprised by meeting an old acquaintance, Medina by name. She had been despatched on an errand by some of Prince Chammaroo's family, and, on her return home, she was intentionally waylaid by some of the prince's emissaries and sold to the Arab chief in whose house I found her. According to her own account, the Prince Chammaroo had applied to her brother for his sister to become one of his concubines. The brother, being a powerful chief, positively refused this command of the prince, and the result was that he secretly vented his rage, by conniving at the seizure and sale of the innocent and unoffending Medina. When she saw me, Medina expressed great pleasure at our meeting, but felt sorry to think of the cause that had brought us together. She advised me to do whatever I was desired, assuring me that the white man (meaning the Arab) would not care for taking our lives, and that killing us would not cost him a thought. We were firmly secured together with iron chains on our feet, the chain being first riveted on her right leg, and then secured with a key to my left. A strict watch was set over us, and we were never permitted to go far from the house. Medina, being the elder, frequently laid down plans for our escape, but those were never matured or carried out; the fear of being recaptured preventing active measures.

A short time after this a caravan consisting of merchants and travellers left the Arab village for a day's journey to the eastward. Our master joined them, and about sunset we reached another village inhabited by Arabs, but he was disappointed in his object: the merchants to whom he intended to sell us had left that morning. The market had been broken up, and we had to return home, our owner not having had even a single bid for our bodies. Another caravan was soon equipped upon a larger scale, and for a greater distance. This was to a large town called Kordofan, also under the jurisdiction of the Pacha of Egypt, and garrisoned by Egyptian troops. The first day we pitched our tents at a well of water, not having seen a single house on the whole of our journey. The second day was very tedious, for we had to pass through a country entirely bare of every vestige of vegetable matter, and the ground was so dried up that every now and then we came to earth-cracks—large gaps which yawned for want of water, and gaped wide enough to swallow an elephant. We continued our journey till late at night, when the guidance of some lights directed us to a distant village, where we arrived and reposed ourselves. We stayed there for some time, and shared the unfeigned goodwill of the people, who were uncommonly kind. Hospitality is a precept and a practice handed down from generation to generation by the patriarch Abraham. When he unconsciously entertained the three heavenly messengers, he was doing exactly that which is practised by the Arabs of the desert at the present day. "Beitná Beituk," My house is thy house! is, with a very few exceptions, the maxim of every dweller of the desert, and East Africa hardly yields to Asia in this particular. The more refined citizens will place the finest rooms in their houses at the disposal of the stranger. Their horses, their servants, the best fruits in their gardens, nay, even their own services are at the command of the guest; and that man is a black sheep in the flock who is found wanting in courtesy to the traveller, be he Christian or Moslem, Jew or idolater, gentle or simple, rich or poor. The name of the village was Albahar or Albeit, and near it was a Turkish camp, temporarily established

for carrying on slave-hunts. During our stay we were taken to the camp, and put through various forms, which none but a slave dealer or buyer could imagine. The first thing we were desired to do was to show our tongues and then our teeth; our limbs underwent a serious examination also, but this was done privately in the farthest corner of the tent.

On the day following this examination the camp broke up and set out for Kordofan; we being directed to fall in. There were a few slaves secured by means of forked sticks to camels, and also a batch of Arab girls that had actually been hunted in the village and forcibly compelled to mount the soldiers' dromedaries. Two days brought us to Kordofan, the approach to this Muhammadan seat of learning being characterised by heaps of dead bones of man, camel, horse, and donkey. This was the largest town that Medina and I had seen, and we now began to imagine that we had arrived amongst the people that live at the end of the world, and whose business it is to kill all the blacks, and to use their blood as a dye for red cloth: our ideas were confirmed when we saw so many of the soldiers wearing scarlet caps. We gave ourselves up for lost, trepidation and despair seized our souls and bodies.

Arrived at Kordofan, we were both sold to another Arab, and on the second day after our transfer we saw our former master and some of his Tegeleyan friends mounted on beautiful Arab chargers, some of them no doubt bought with our blood. We watched the caravan till it got out of sight, and then poor Medina burst into a flood of tears, and vehemently called out the names of her brother, her relatives, and the bosom friends she had left behind in her dear home.

Four days after this we were sold to a Turk, a captain in the Egyptian army, and a very Nimrod in spite and cruelty. Medina was immediately made a member of the Agha's seraglio, and I was initiated into the secrets of making coffee à la Turque, besides running messages, and attending upon strangers and visitors to the captain's quarters. I very well remember the first person whose name I had to introduce to my master. He was a camel-driver and camp follower, employed in the service of the Egyptian Government, and had been despatched with four camel loads to a neighbouring camp. It appears that the miserable wretch was four days behind time; the moment therefore that the Agha heard his name, he jumped up in a rage, and calling the man by certain most unseemly names, ordered him to receive fifty strokes with a large cudgel kept for the purpose. The wretch groaned a death-like moan; he was thrown on his side and the bastinado was administered upon his shoulders. When ordered up after the castigation, his body was bleeding in different parts, and his cheek was skinned by the convulsive efforts with which he raised his head and struck his cheek on the ground after every blow. This was the way that the Agha answered every complaint that was brought to him. Soldiers suffered, civilians groaned under the lash, and every attempt at begging pardon was answered only by a double flagellation. My own sufferings while in the service of this monster augmented daily. If he called, he said that I ought to answer him no matter at what distance. On one occasion, having been sent on an errand by the head lady of the seraglio, he addressed me on my return with "Where have you been?" and then he commenced beating me; no ordinary blows were administered on that occasion. He kicked my body; he played at ball with my head, striking first on the one side and then on the other. I became almost senseless, while the blood was running out of my ears; and even till to-day, after the lapse of nearly twenty-nine years, I frequently experience a wheezing and deafness in the organs of hearing, especially during damp weather. On another occasion, the house being quite full of strangers, during visiting hours, I was ordered to make coffee, which I did and served out to the guests. Unfortunately, however, I had made a few cups more than was required: my master said nothing at the moment, but waited till bed time, and after I was sound asleep he seized a horse-whip, and, coming upon me unawares, punished me till I was quite speechless. I am persuaded he would have killed me had not one of the upper slaves, a confidential soldier, come into my room and taken the whip from the enraged Tartar.

Amongst the many visitors who frequented the Agha's house was a Turkish Effendi, who had settled as a merchant in Kordofan. He had seen myself and Medina on our arrival, and he wished to become a purchaser, but had been outbid by the Agha. He now offered a tempting price for my companion, and the Agha not being proof against the offer, at once sold her whom he had taken for his wife. I remained about six months the slave of this remarkable specimen of inhumanity, and was released from his clutches in the following easy and singular manner. One day a benevolent-looking Arab came and took coffee with the Agha. I was at my post and had just served out the aromatic beverage. Immediately after coffee I was ordered to go with the stranger, and to fetch some soap. I submissively obeyed, and trudged after the swift-footed Bedouin as fast as my young limbs would permit. The journey was interminable, according to my way of thinking, and I ventured to ask how to find my way back, particularly as the sun was setting. The Arab told me he should see that everything was right, and we arrived at a house where I met two more Arabs, one slave boy, and three girls from Darfur. Whether the Arab had cheated the Agha out of my value, or whether I had been really sold for soap, are questions that I shall probably not be able to answer till my dying day; but one thing is certain, and that is, I had now met with a number of playmates and a kind master. I entirely forgot to ask my way home on the following morning, and at this distance of time I can sincerely hope that the Agha was none the worse for not seeing me return with the soap. My new master's name was Jubalee, and those of his companions, Achmet and Mehemet, all natives of New Dongola. Mehemet was the youngest of the three, a professed prayer-loving Moslem, and a teazer to the slaves, being ever ready to apply the lash for amusement when he had nothing else to do, between his devotions. He devoutly and religiously shaved his head, leaving a little top knot on the crown, by which means, according to his belief, the angel Gabriel would pull him out of his grave at the Last Day.

I was the last addition to the complement of slaves, and the Arabs at once commenced making preparations to start for their country. They purchased a few camels, a horse, and an ass, some dates, corn meal and water-skins; and, thus equipped, we started across the desert of Bahayuda to Senaar, between the Blue

and the White Nile. The journey occupied ten days, during which time we had to march across a country entirely composed of limestone and sand; not a single blade of grass, not a herb of any description was visible on this vast expanse of arid desert. We had to husband the whole of our provisions and water, particularly the latter, for the following reason. Our water-skins had been divided among the loads of the different camels; but the main supply was slung to the saddle of a spirited young grey camel, which was entrusted to my care. A female slave was taking a "spell" on the saddle whilst I was riding on the space immediately behind the hump and holding on to the after pommel. It was the middle of the day, and the sun was hot to broiling, whilst in the distance we observed that arrant deceiver the mirage, or, as the Arabs call it, Moyet-il-Jehannum, the water of Gihannar. The camels were pacing in a string one after the other, and all were silent, being afraid by opening his or her mouth to create an insufferable thirst. The water-camel was in the van, and before any person was aware we came upon a camel lying across our path: it was in a state of high decomposition, and our olfactory organs revolted at the pestiferous odour arising from that never-to-be-forgotten dead camel. All the beasts immediately began to inflate their nostrils and to prick up their ears; then followed a confused and involuntary dance—such a dance as might have suggested a new figure to a professed *danseuse*. I slid down the back of the camel, while the female slave was very unceremoniously pitched from the saddle. None of the other riders were unsaddled; but the stench made all their animals perfectly furious and entirely ungovernable. The water-camel was off helter-skelter to the desert, and the confusion that ensued was indescribable. Both master and slave were deeply interested in the burden of the water camel. "La ilaha ill Allah, there is no God but *the* God. Catch him! Catch him! Stop him! Stop him! Allah u Akbar, God A'mighty!" and so on. Noise, prayers, and religious ejaculations were all thrown away, the water-camel pranced, kicked and galloped until the whole of the skins burst open and discharged their contents upon the insatiable sands of the desert: be it remembered, this sad catastrophe occurred when we were full six days distant from the banks of the Nile, that being the nearest place where the necessary water was procurable. No cooking after this accident, and what little water was left was served out a few mouthfuls to each person at the time of our encamping for the night. The corn meal was given to us dry, and that, with a few dates, constituted the whole of our fare for five long days, which seemed fifty.

About noon on the tenth march, after leaving Kordofan, a glorious prospect opened before our eyes—that sight is still fresh in my memory, and if any of my companions, "shipmates of the desert," are still alive, they too, surely look back with the highest pleasure and the sincerest gratitude to that day, that epoch in our journey after leaving Kordofan. We stepped suddenly on an oasis, a delightfully verdant island in the midst of the sea of sand. To look upon grass was a goodly luxury to our scorched and bleared eyes; but here we had not only green grass, but green corn, green water-melons, and a fine green shade to rest under. The owner of the farm invited us to regale ourselves with the water-melons, and, in the meantime, he roasted some young maize for our second meal. We feasted on corn and melons, on water-melons and corn, on corn and water-melons, and on water-melons and corn again, and the whole of us retired to rest that night quite in good humour with ourselves and in perfect harmony and good feeling towards our neighbours and every animated being in the world.

Before leaving for ever our happy valley I must indulge in some reminiscences of it.

I have already stated that the valley of Tegeley is situated between Darfur and Kordofan. It is an undulating table-land, bounded by two ranges of low hills, the highest part of which might be about 300 to 400 feet; and in the centre is a water-course, flowing through the whole distance, some 16 miles, parallel with the Nile, south to north to the lower part of the valley. Dry in the dry seasons, during the rains it is a complete torrent, running some seven or eight knots, and in many places very deep and perfectly impassable. On either side of this mountain-stream the country is all under cultivation; in short the site is so thickly peopled that many of the inhabitants are compelled to make farms 4 or 5 miles beyond the principality. The ground which my father possessed there was not sufficient for the growth of corn for all our family; he therefore obtained a grant of land in the territory of a prince of the name of Daldoum Abshenet; and it was there that the greater part of our supplies were produced, and there also that the intended farm for your humble servant was cleared, and made ready for him. The inhabitants of the valley being mountaineers, are manly, and brave candidates for valour, and are expected to encounter and kill a lion;* and when successful, they are permitted to wear the skin of their victim as a mark of distinction. A short time before I was stolen away from my country, an uncle of mine killed a lion and thus raised the name of our family to the rank of nobles in the land. He was presented to Prince Chammaroo, who at once gave him the command of an expedition against a predatory horde that infested the neighbourhood of the country. My father and nearly the whole of the able-bodied men in the house at once volunteered to accompany the lion-killer, and after four days' march into some country to the eastward, that is to say towards Senaar, they came upon the robbers just at dusk, and completely routed them; taking possession of everything that the enemy had, besides bringing in four prisoners. The implements used in Tegeley warfare are spears and shields; and I never remember having seen a gun until I came to the camp of the Egyptian soldiers, between three and four days' journey from my country. The captives taken in the affray were shortly afterwards ransomed, and the mother of the chief of the enemy was sent to us, as a guarantee for the future amicable relations of the two tribes, my grandmother being sent as a hostage to the enemy's country in exchange. The valley, as far as I can remember, was very productive, the waving corn growing luxuriantly throughout all parts of it, and cotton was cultivated for the manufacture of country clothes. The weaver's trade in Tegeley is, unlike in other parts of the world, quite

* Lions are often bogged in the holes and pits made by nature during the rains.—*R. F. B.*

an aristocratic employment. Besides the above productions, we have wild grapes, figs, and water-melons, all of which are eaten by the natives. The gourd or calabash grows everywhere and is used for dishes instead of porcelain, country pots, however, are made by the women. The year is there divided into two parts, the rainy season and the dry, when the ground is prepared to receive the seed, and houses are built or repaired. The tenements are of the circular form usually to be seen throughout Central Africa; and a rich family will have five or six of these huts about 10 feet apart from each other, the whole enclosed within a stone or mud wall 5 to 6 feet in height. There are generally two entrances into the courtyard, and the various houses within are appropriated thus—one or two as sleeping apartments for the family, a kitchen, a mill room, and a fold for the sheep and goats. The government is despotic, the power of life and death being vested in the hands of the prince. As I never observed any of the ceremonies of the Moslem faith in my country, and as the people are taught to believe in the existence of the soul hereafter, and as I never saw any idols or other heathen superstitions in the valley of Tegeley, I may infer, from our proximity to Abyssinia, that the religion is a corrupted form of Christianity. Very few of the men had more than one wife, and the children were brought up to industry the moment they were able to work, every encouragement being given them by their parents and relatives until they became able to provide for themselves. Husband and wife are usually betrothed to one another when children; and when the former has a home ready to receive his bride. The marriage is performed in the following simple manner. Of course all the friends and relatives are perfectly aware that the happy event will take place at some period or other. The young man therefore goes to the house where his betrothed is living, and orders her to cook for him, and to take the victuals to his hut. The bride obeys the mandate, carries the savoury dishes to the house of her future husband, and kneeling down before him, presents her handiwork for his acceptance, and from that day they are man and wife. I do not remember a case of divorce; nor are there, to the best of my memory, any priests in the country.

During my stay in my country there is only one rainy season that I remember vividly; and that was the one after my father cleared the farm for me. My brother Comang was now old enough occasionally to relieve me from the charge of the flocks, and I often accompanied my father to the farm to assist him in sowing. I began, in fact, to feel myself growing into manhood. Not to say that I was very precocious, but my father had procured a shield and some spears for me; and also pointed out a family in whose house I was to engage my future wife. Here is your house said that good parent; go and order such and such one, calling her by her name, to cook for you, and come and live in your house. With us a father's order is sacred, but if I disliked the Princess Chammaroo, the new person filled my mind with terror, for I was only about eight years of age, whilst she had reached the awful and marriageable age of twelve. I submissively obeyed; although I very quietly suggested that she might beat me. The parents received me with courtesy, and arrangements were made for my taking to myself a wife; but it will be seen from what has already been written that the affair was never brought to an end. My time was now divided between the flocks and the farm, and I occasionally accompanied my uncle and other sporting youths into the jungle. The following hunt took place towards the latter end of the rainy season. We had ascended a high eminence, and after eating some wild grapes in the woods, we made for an extensive valley in the principality of Daldoum Abshenet. We separated into various groups, but had not proceeded far down on the other side when a most beautiful sight opened itself to our gaze. This was a magnificent valley extending right, left, and before us for many miles; all covered over with low bush; and every here and there might be seen a small clearing for a farm. And, what was grander still to our eyes, a herd of giraffes or cameleopards were feeding in the jungle, not far distant from us. Without the least exaggeration, there must have been at least 200 of these swan-necked and most graceful animals scattered over a vast expanse of the woods below us; and nothing could have added greater novelty to the scene, than a view of our game nibbling, with mouths like the gazelles, the topmost branches of the extensive bush. My uncle was in ecstacies, and gave orders for the immediate division of the party into two sections; one to follow in the rear, and the other to advance to the front of the herd. My uncle and myself were of the former. The first game we encountered was a party of two kidnappers, waiting a chance for seizing some of our people on their return through the bush from their new farms. These kidnappers are common throughout the country. They are the offscourings of the people round about the valley of Tegeley, and being of debauched and idle propensities, employ themselves in covertly catching estrays, and in selling them to the slave-dealers. We let fly our spears at them, but the jungle on that side was so thick that they easily slipped away from us. Onward we pursued the giraffes till we succeeded in killing one. In the evening the whole party assembled at a place appointed for a rendezvous, and we produced our trophy; whilst the other party showed us the spoils of a fine old lion. This was skinned and the hide was given to the successful hunter; but as the wise men of our Gotham had decreed that no native of the Gebel Tegeley was to eat lion's flesh, the carcase was bartered for corn to a neighbouring tribe. We were, on our side, quite satisfied with our bargain. There is no coin or currency of any description in the place, the commercial system being that of barter. The sandal-maker gives his sandals for corn and hides; the weaver exchanges his cloth for cotton and provisions, and the whole tribe combine in performing gratuitous labour for Prince Chammaroo and the royal family, that *corvée* being equivalent to paying taxes. There was only one horse in the whole of the valley of Tegeley, and that belonged to the chief.

As I proceed with this narrative, new scenes and fresh recollections present themselves before me; for I now remember that the above horse was only ridden once a year by its proprietor. This was at the period of harvest-home, when the crops were all gathered in, and when the people were preparing to enjoy the fruits of their labour. The prince orders a grand assembly of the people, and after haranguing them about the prospects of the year, rides out of the palace-yard and gallops down to the centre of the stream, a

distance of about 2 miles. He is energetically followed by the masculine portion of the populace, all of whom are dressed and ready for war. Besides the shields and spears before-mentioned, some of the warriors wear a knife encased within a leathern sheath, and attached by means of a leathern thong to the small arm between the elbow and the shoulder. The next object is to procure a goat to be sacrificed under the horse's belly, and for this purpose the warriors run about in all directions, proclaiming the name of Prince Chammaroo with stentorian voices, and giving a yell which is the signal of death. Altogether it is a most exciting "country custom." The goat being caught, the successful person almost flies with it to the position occupied by the prince, and unsheathing his knife, cuts the throat of the victim, and then hands in his palms some of the blood for the prince to sprinkle himself with. Every person follows the example, and the carcass of the goat is left for any one who may choose to take it away. Is this the scapegoat mentioned in the Book of Leviticus? The prince is dressed in loose Arab robes of foreign manufacture, the brighter the colours the more gorgeous it is in native eyes. Men of the higher class wear the surwal or common Arab loose trousers, besides a country cloth thrown over the shoulders.

Very early on the following morning we made a start, and after a short journey arrived on the banks of the Nile, immediately opposite the town of Senaar. Jubalee and Mehemet left us and crossed over to enjoy themselves, the good old man the Shereif Achmet being left in charge of the slaves and the beasts of burden. Here we fattened for a fortnight upon the products of the land, Indian corn in any quantity, water-melons, fowls from the neighbouring farms, with occasionally some camel's flesh; and for vegetables the young leaves of the water-melon and the Senna plant—Senaar being the noted spot for that useful and popular medicine.

A ludicrous incident occurred, in which I played a foolish part, during our stay in the valley of Senaar. The old Shereif sent me one day to fetch water from the river, giving me a wooden bowl for that purpose. Always a willing boy, especially since Medina's advice, I ran to the waterside and filled my bowl; but on lifting it up to return to our encampment, I cast a glance up the river, and, to my utter astonishment and dismay, saw an object with a black bottom and white top coming towards me, apparently at full speed. Fright at seeing this new and singular apparition at once riveted me to the spot, and it was some time before I could collect my senses. It was evident to me that the thing had eyes, for I now saw it bearing towards the place where I stood on the bank of the river. No time was to be lost. I bethought myself instantly, threw the bowl down suddenly from off my head, smashing it to pieces, ran at full speed to the old man, and breathlessly described to him the awful sight that I had seen. He asked for the bowl. "Broken, O Shereif!" I replied. He told me that I had only seen a ship, and severely reprimanded me for my foolishness; but his character of Shereif saved me from a good flogging.

The fortnight over, Jubalee and Mehemet returned from Senaar. They were accompanied by a vast concourse of merchants from this commercial emporium of the Upper Nile. Our caravan now swelled into a large body, and what with prancing horses, loaded camels, and armed merchants, we looked exactly like a large marauding expedition. We started on the morning after the arrival of the Senaar merchants, marched along the banks of the Nile, and in due time arrived at Dongola. Jubalee, Achmet, and Mehemet now dissolved partnership, and divided the spoil equally. It appears that I was the private property of Jubalee; his wife therefore retained me in the house to carry water, &c. This woman was of a very quarrelsome temper; and my master, finding that he could not live with her, sold me to Mehemet's father and went away to another part of the town. My new owner took a fancy to me almost at once, and declared that I should be brought up as a slave trader, but my lucky star was in the ascendant, and an Arabian Jew purchased me to look after his stores in the Dongola Arcade. He must have been a wealthy man, for his house was well furnished with divans and fine carpets, and his family were all dressed in rich silks and other fine cloths; besides which, his establishment was larger than any in the neighbourhood. There was very little or nothing to do at his place; and as he did not believe in "keeping dogs that did not bark," he sold me next to a native of the Berber country in Nubia.

My new master at once took possession of me, and carried me to his place some 2 miles from Dongola farther down the river. I forget this man's name, but I clearly remember one characteristic in his appearance, he was unmercifully pitted with the small-pox, although in other respects he possessed excellent proportions, a straight figure, fine limbs, and smiling features. When we left Dongola, we crossed another branch of the Lybian Desert, and passing the second cataract and the rock-hewn temples of Ipsamboul or Abou Simbel, we entered the village of Korti, or Goorti, the native place of our master. I say our, because there were three of us—a little Arab-featured girl from Senaar, a boy from Soudan, and myself. At Korti I was made to work at native farming. The inundation of the Nile had just subsided, and I was employed in driving the oxen that were attached to the sakya, or water-wheel. This was one of the means employed for irrigating the land by the richer classes, the poorer inhabitants used the shadouf, an apparatus consisting of a long lever suspended between two pillars of wood, a rope with a bucket being attached to one end of it, and a lump of mud or a stone at the other, to act as a counterpoise. The person who draws the water lets down the bucket four feet below him into the river, and dipping it full of water, raises it, with the aid of the weight at the other end of the lever, some five or six feet high, where it is emptied into a canal, which conveys it to the fields. Nubia is very severely dealt with by the Egyptian Government, every man being compelled to serve in the army, whether he will or not. In my time there was a press-gang both by land and water, perpetually harassing the inhabitants, and it was not unusual for all the people to fly from their houses, and live in the desert, for many days together. Taxes are levied on the water-wheels and palm-trees, every palm-tree paying one piastre, or two-pence halfpenny per annum.

The trip to Dongola had enriched my master, and he now made an addition to his family by marrying another wife. Amongst my master's children there was one

urchin whose name was Haroun. He was ordered by his father to teach me the secrets of the Muhammadan religion. Haroun, therefore, commenced his task by seating me on the ground, tailor fashion, and by holding up one finger before me, saying at the same time, "Allah wahed" (God is one); but I so incorrigibly persisted in affirming that there were two Gods that my master was compelled to send me to the sheikh for better tuition. The old sheikh very wisely ordered me to look after his sheep and cows, so that I never heard anything more of the mysteries of the Muhammadan faith.

The village to which I was sent was called Dake: it boasts of an old temple, said to have been built in the reign of Cæsar Augustus. Crocodiles and hippopotami abound in this part of the river; the latter are very destructive to the fields; they come out of the water at night, and what corn they do not eat they trample under foot. Their stomachs are inordinately capacious; the hippopotamus presented by the late Pacha of Egypt to the Zoological Society in Regent's Park, London, is said to have consumed sixty pints of milk per diem. The crocodile of the Nile is also destructive; but his aim is to destroy human life.

After I had stayed some three months at Dake, the periodical congia or Nile boat called for slaves. I was shipped with the rest for the slave-market at Cairo, Hemet Hether, for that was my master's name, and his brother-in-law accompanying us. Passing through Bab-el-Calabashe, a narrow gorge in the river, we arrived at Assouan, the ancient Syene. Here we had to disembark and to walk overland for some 6 miles, till we reached the lower part of the first cataract. Syene is about 640 miles from Cairo. All about the cataracts the land is scattered over with ancient buildings, the ruins of which are grand even to the present day. The most picturesque spot is the island of Phila, the site of the beautiful temple of Isis, and the most sacred spot in ancient Egyptian mythology. The island is pre-eminently beautiful, being covered over with trees, and other luxuriant vegetation. As the author of *Lands Classical and Sacred* says, "The trees that grow in Egypt are not numerous. There are a few species of the acacia, the sycamore, and the date and doum palms, but the most characteristic part of Egyptian botany are the aquatic plants found on the edges of the lakes and marshes. Of these the lotus and papyrus are identified with the history of Egyptian arts, literature, and religion. The papyrus grew in Lower Egypt, and was therefore an emblem of that country; while the lotus, which flourishes in the upper countries, was emblematical of Nubia and Ethiopia. The papyrus is remarkable in Egyptian history as having been used as a writing material; many of our manuscripts of the Bible were written on leaves of the papyrus. The lotus still exists in Egypt; the papyrus has ceased to exist. 'The paper reeds by the brooks, by the mouth of the brooks, and everything sown by the brooks shall wither, be driven away and be no more.'"—*Isaiah* xix. 7.

Thebes, that city which at one time measured 30 miles in circumference and 9 miles in length, still retains parts of its bygone splendour, especially the temple palace of the great Sesostris, the two sitting colossi of the plain, Medinet Abou, the ruins of Luxor, and the council hall of the Temple of Kharnak. Then we have the Biban-el-Moluk or the tombs of the kings, and the wonderful excavations and mummy pits of Western Thebes, where you view the dead almost as if alive. This will recall to mind Horace Smith's address to the mummy, beginning with the well-known lines—

> "And thou hast walked about, how strange a story,
> In Thebes' streets three thousand years ago," &c., &c.

Mr. George Gliddon, late Consul for the United States in Egypt, an archæologist and statistician, calculates the number of mummies at present existing in Egypt at 500,000,000. From Gizeh to Dashour, a distance of about 60 miles, the ground is entirely covered over with pyramids and mummy pits at Sakkara, Dashour, Meydown, and Gizeh, in all numbering thirty-nine, and the Prussian scientific mission discovered the bases of thirty others. These most curious, most suggestive, and most renowned monuments of antiquity, have been proved beyond a doubt to be the tombs of the Pharoahs of Egypt, the first or great Pyramid of Gizeh being that of King Suphis, the cheops of the Greeks. The second pyramid is the tomb of King Sensuphis, or Cephrenes, and the third is the place of sepulture of King Mencarre, or Mycerinus. Neither must we forget the town of E'siout, the present capital of Upper Egypt, with its population of 12,000, and its pleasing historical association of having been the place where the infant Saviour and His mother abode when they fled from Judea to escape the persecution of Herod. Girgeh, with the Roman Catholic Convent of St. George's, and a population of 7,000; Denderah, with the sculptured representations of Queen Cleopatra and her son, Ptolemy Cæsarion; besides the twelve signs of the zodiac represented on the ceiling, showing that the Egyptians were not ignorant of the science of astronomy; the Temple of Edfou, the Apollinopolis Magna of the Romans, remarkable for its perfect state of preservation, and at present converted into a powder magazine for the Egyptian Government; Esne and Manfaloot, remarkable for their Gawazi, or dancing-girls; and above all, the cities of Alexandria and Cairo; the railway, the steam-boats on the Nile, and the overland route to India.

These are some memories that I have picked up since my school days in Scotland; but when I entered Cairo on a bright, a glorious Egyptian morning, the sun shining without an envious cloud to mock its brilliancy, bulbuls singing from the fruit-bearing hedges of cactus a song of thanks to the Almighty, who in His great and wonderful care for creation, has numbered and set apart the very sticks and thorns which constitute her nest, I was marched into it a miserable slave, unable to comprehend all the great moving causes around me, and existing only as the property of Hemet Hether, the Berber slave-dealer. Forty of us were counted as we entered the gates of the city, and the man who kept the tally grumbled at seeing so many masters and so few slaves. We took up our quarters at the foot of the Gebel Mokattam or Mokattam Hills, daily going to the slave market to be exposed for sale, and after passing through this routine for upwards of six weeks, I was purchased by Mons. Piozin, and sent down to Alexandria for the late venerable Robert Thurburn, Esq., Her Britannic Majesty's Consul in Egypt, by whom I was taken to Scotland, and left there to be educated.

Selim Agha

Reviews.

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EXPERIMENTAL MILITARY SURVEY OF THE RUSSIAN CONFINES OF ASIA.

II.

RESUMING our notice of Colonel Veniukof's work, we shall this time devote ourselves exclusively to Manchuria.* This immense and densely populated province of China is bordered on the north-west and north, from Abaigatu—a point near the Dalai-Nor—by the Argun and Amur Rivers, to the mouth of the Ussouri, and is flanked on the eastern side by the Russian maritime region which extends from the mouth of the Amur to that of the Tumen in the sea of Japan; on the south it terminates with Corea, the Yellow Sea, and a portion of the Great Wall. When Count Muraviéf (afterwards styled Amurski) secured the written sanction of the Emperor Nicholas (on the 14th of January, 1854), in spite of the objections raised by Count Nesselrode, for the annexation of the Amur country, and proceeded forthwith to occupy the left bank of that river, he was prepared with another project of military occupation, which was not, however, carried into execution until after the Crimean war.† Atkinson makes some observations on the extensive preparations which were in progress in his time at Irkutsk for the annexation of the Amur: this project had been long elaborated, and it presents a striking instance of the foresight of the Russians in their policy, and of the tenacity with which they adhere to preconceived plans. The Crimean war expedited the execution of the first part of the project, for quantities of troops and stores of all kinds, together with forced levies from among the unprivileged classes of society, were hurried through Siberia to the Amur for the colonization of its banks, as also for the reinforcement and defence of the Russian posts on the seas of Okotsk and Japan. Thus, after a lapse of nearly two centuries, Russia unceremoniously repossessed herself of the left bank of the Amur, from which, in 1660 and 1689, her freebooting Cossacks had been successfully driven away.

The second part of the project, which was an indispensable corollary of the first—the annexation of the stretch of country between the Ussouri and the sea—was virtually carried out in 1858, when, as Colonel Veniukof observes, Russia might have done anything she pleased with China. Availing herself of the awkward dilemma in which China was placed during the operations against her of the English and French forces, Russia secured by treaty the right of possession, which she had already assumed, of the left bank of the Amur, down to the mouth of the Ussouri, and of both banks below the mouth of that river, while she also secured the right of free passage along the Ussouri and Sungari Rivers for her merchants and travellers.

So anxious, indeed, was the Russian Government to benefit fully by the troubles in China in 1858, and so quick and unanimous were the Russian Government, the Russian Embassy at Pekin, and the Governor-General of Eastern Siberia, in their endeavours to reap that full benefit, that two separate treaties—identical in their provisions—were simultaneously concluded. One at Aigun (on the 28th of May, O.S., 1858) by General Muraviéf,* and the other by Admiral Putiatin at Tientsin on the 13th of June; neither Muraviéf nor Putiatin being aware that the treaty was thus being concluded in duplicate. In 1860 General Ignatiéf brought about the conclusion of a still more advantageous treaty, signed by himself and Prince Kung, in Pekin on the 14th of November, by which the Ussouri country was distinctly made over to Russia, thus legalizing the existence of the Cossack settlements founded on the banks of that river, and even on those of the Sungacha, in anticipation of formal sanction.† This later treaty granted to Russia a site for a factory in Kashgar, and provided for the establishment of Russian Consuls in that place and in Urga; it restored to Russian merchants the right of trading with Pekin and Kalgan, and in other places within the empire; it contained provisions for the facilitation of international and commercial intercourse; it abolished the imposition of duty on trade on the frontiers, confirmed the Russians in the possession of the lands which they had long before occupied around the lakes Balkhash and Issyk-kul, and annulled the treaties of Nerchinsk (1689) and Kiakhta (1727). Giving the text of this treaty, Mr. Ravenstein observes, with a commendable perspicuity, "The importance of this treaty can scarcely be overrated. Russia has now acquired a legal right not only to the country north of the Amur and east of the Oussouri, but also to the entire coast of Manchuria down to the frontiers of Korea. The value of this coast, with its magnificent bays and harbours, is great, quite independently of the Amur, and is fully appreciated by the Russians, who have rechristened Victoria Bay as the Bay of Peter the Great, and one of its ports they call Vladivostok, '*Dominion of the East.*' On the Amoor and Oussouri, however, the boundary-line does not bear the stamp of permanency. Russia holding one bank only of these rivers, whilst China holds the other, may at any chosen time furnish a government desirous of encroaching upon its neighbours with fertile causes of dispute, and when the time comes when the huge Chinese empire tumbles to pieces, the whole of Manchuria, with Leaotong, must become the prey of Russia."

In General Muraviéf's project much more, however, was aimed at than was even secured later by the above treaties, for it appears from Chinese sources‡ that overtures were made to the Chinese Government, not alone for the cession of the whole of the Amur Province, but also for that of the provinces of Girin, and Liautung in return for proffered aid against the Taeping rebels. If, however, in those times the Russians were under the impression that China was falling to pieces, and that they themselves were in a position to occupy

* Manchuria is so-called after the Manchu race.

† See "Russia on the Amoor," *Quarterly Review*, July 1861.

* This treaty was afterwards repudiated on the ground of certain informalities, when the Russians were called upon by the Chinese to evacuate the country of the Amur. They had on many previous occasions been urged to do so, for the Cossacks had incessantly levied black-mail from Chinese subjects, revisiting the site of the old fort at Albazin, and making themselves generally at home at various points along the river.

† See "Russia on the Amoor," *Quarterly Review*, July, 1861.

‡ Ravenstein's *Russians on the Amoor*, p. 140, and *vide* Tilley's *Japan, the Amoor and the Pacific*, 1861.

and to retain their grasp on Manchuria or on a portion of it, they have now discovered that the Chinese in that province present a face so formidable that it is all important to take precautions against the possibility of dangerous aggressive operations. It is thus made to appear that Russia has overstrained herself. As a result of long and persistent endeavours, she has attained a position whence she apprehends that the menaces which she intended to hold out to China may any day recoil upon her own self.

The translator of Timkofski's "Travels through Mongolia to China" draws attention to the fact, that the Russian Government had a regularly established religious and scientific mission in Pekin for a whole century previous to 1827, and makes the following very pertinent observation, which is in a great measure applicable to the present day:—

"It is natural to inquire what advantages literature and science have derived from the Russians having thus possessed for 100 years an opportunity which no other Christian nation has enjoyed, and which, if allowed to natives of England, France, or Germany, would most probably have long since made us fully acquainted with everything relative to the history, the institutions, the government, &c., of this great empire (China) and its extensive dependencies. To this no satisfactory answer can be given. So far as we have been able to ascertain, none of the members of any of these successive missions, each of which remains ten years at least at Peking, have ever published anything on the subject of China, even in the Russian language." *

We can explain this very satisfactorily. There was not in Russia of that day a reading public, and printing presses existed only in some of the departments of state; even up to the present time the publication of all works, excepting periodicals, and books on certain important questions of the day, is more than unremunerative to their authors. Therefore when "His Excellency Count Nesselrode, on the representation of M. Rodofinikin, Director of the Asiatic Department of the Ministry for Foreign Affairs, obtained for Mr. Timkofski the patronage of the Emperor Alexander, in the publication of his journal," he initiated a practice which will be long continued in Russia.

The works of Father Hyacinth (Bechurin), who was in China from 1807 to 1821, were published under similar circumstances and simultaneously with Timkofski's, the latter having availed himself largely of Hyacinth's MSS. and assistance: this is the earliest and sole standard work on China in the Russian language. The results of nearly all other Russian travels in the far East, as well as in the more western parts of Asia, have been handed down to us by Western Europeans, as for instance, Everard Isbrand Ydes† (1698), Lange (1730), Pallas (1768), Middendorf (1845), Florio Benereni (Bokhara Khiva) (1725), and others too numerous to mention.

While on this topic we may as well refer to Mr. Struve, who is quoted by Timkofski at p. 19 in vol. i, and who in the German language gave an account of the journey of the Russian mission to Pekin, in 1805. We make this reference partially with the object of drawing attention to the curious fact that Klaproth, in a note to Lloyd's translation of Timkofski, accuses Struve of palming off a "pretended journal" on the public, even while he himself interpolates in further annotations references to the scientific forgery which he must then have been concocting, and which has been traced to him and exposed by Sir Henry Rawlinson and the late Lord Strangford.*

The country of Manchuria—traversed by the first Russian Envoy to Pekin, in 1685, and by numerous successive Russian missions, and so well described in the letters of the Roman Catholic missionaries, commencing from 1838—is tolerably well known to us, even from the published accounts of recent journeys. Exclusive of the purely Russian information on Manchuria, we have English descriptions of routes, and of the country generally, which enable us to form quite an independent idea of that province of the Chinese empire; while Davies and the American Wells Williams have given us ample accounts of its condition, history, and population, with every variety of details on other points.†

M. Veniukof says:—"The mathematical geography of Manchuria is based on two very different orders: in the first place, on the geodesical labours of the Jesuit Fathers in the 17th century—of Bouvet, Jartoux, and Fridelli; and in the second place, on the observations of the Russian astronomers, Rashkof, Usoltsof, and Gamof on the Amur and Sungari Rivers, and on those of Englishmen in Liau-tung. Up to the year 1854, all maps of Manchuria were constructed on the bases of the thirty-

* Mr. Lloyd was not aware when he wrote this that even while he was writing, Father Hyacinth, who travelled on a mission to China, through Manchuria, was publishing his numerous works on that empire and its dependencies.

† Not more than a year age we noticed in the *Turkistan Gazette* a mention of the discovery of an account of Isbrand's journey in the archives of Omsk. In alluding to this the writer seemed to be unaware of the existence of the work in the Dutch and English languages. It was printed in a separate form and is to be found in Goadby's collection of "Entertaining Accounts of all the Countries of the known World—MDCLII."

* Father Huc appears to have doubted even Klaproth himself, for, in 1848, he wrote as follows in allusion to that self-constituted authority on the geography of China and of other portions of the globe:—"The zeal of a writer will not always suffice to describe countries in which he has never set his foot. To write travels in China, after a saunter or two through the factories of Canton and the environs of Macao, involves the danger of speaking of things that one is not thoroughly acquainted with. Although it has been the good fortune of the learned orientalist, J. Klaproth, to discover the Potocki archipelago, without quitting his closet, it is, generally speaking, rather difficult to make discoveries in a country which one has not visited." Huc might have added, "Without in the end putting his foot in it," had he been gifted with great foresight. With reference to the forgery by Klaproth, with which he imposed upon the English and Russian Governments, we may here observe, although with us the thing is almost settled and now being forgotten, that it seems strange that the Russian Foreign Office could so easily have been imposed upon. It must have been thoroughly understood in Europe at the time that Klaproth was no friend of Russia, as is evidenced in his annotations to all translations of Russian works, and in all his criticisms on them. We may have been partially blinded, and pardonably so, by that very fact. Colonel Veniukof, who has been Klaproth's champion, as well as most Russian geographers and orientalists, ignore this, and continue to place implicit reliance on the man and on all his theories.

† We have been recently favoured with two papers on Manchuria, one by the Russian Archimandrite, Palladius, who traversed the well-beaten track up the Girin and Nonni Rivers, to Aigun, on the Amur, and another by the Rev. Alexander Williamson, on the southern portion of the country (see *Journal of the Royal Geographical Society*, vol. xxxix., for 1869, and vol. xlii., 1872).

four points determined by the Jesuits. The Russian surveys, up to the valley of the Amur River, are dependent on the twenty-six points determined by Englishmen and Russians. As there is no striking difference between the results of the geodesical labours of our own times and those of past centuries, it consequently happens that of all portions of Central Asia, contiguous to Russia, Manchuria is best known topographically, and the map of that country is so far correct that without fear of falling into any great error one may compute its general area at 15,420* square miles [German ?]. Five-sixths of this extent belong to the water-system of the Amur, while only one-sixth of this area falls to the share of the basins of the Yellow Sea and Sea of Japan."

Manchuria, which we call a province in the wider interpretation of that name, is in military and administrative respects divided into three governments—that of Girin of the Amur (Saghalien-Ula), Tsi-tsi-har, or Daùria, (or Manchuria Proper), and Shing-King (Liau-tung).

The topographical and hydrographical features of this country are well laid down on the Rev. A. Williamson's map, which accompanies his paper in the *Journal of the Royal Geographical Society*, by which he shows, as he states in his text, that "the bulk of the country lies like a parallelogram across the map north-east by south-west." This does not exactly correspond with the shape of Manchuria as given by Colonel Veniukof in the excellent map attached to his work. According to this map, Manchuria is traversed, or rather bounded, on its western and eastern sides by ranges of mountains, stretching almost due north and south. The western range is the Great Hingan, and that forming the eastern boundary is the Chan-Boshan, called by Wells Williams the Sih-hih-tih Mountains. Lying between these two ranges, Manchuria is represented by Colonel Veniukof as a parallelogram lying direct north by south, somewhat losing this shape at its southern extremity. The northern range, following the course of the Amur, from north-west to south-east, and thence again to north-east, goes by the name of the Iluri-Alin inside the upper bend of the Amur, and that of the Little Hin between the Sungari and the Amur. This latter is erroneously said by Wells Williams to be the "Yablonni Khrebet," which with all its bulk lies north of the Amur, notwithstanding that connecting links, broken by the bed of the Amur, do exist between the Manchu and Siberian mountain systems. To put it as Wells Williams does, "the Inner [Great] Hingan or Sialkai range extends over [borders] a great part of [Eastern] Mongolia, commencing near the bend of the Yellow River, and stretching in a north-easterly direction, forms in Manchuria three sides of the extensive valley of the Nonni [Naùn], ending between the Saghalien [Amur] and Songari at their junction." Thus, as we see, Manchuria is on all four sides (in the south it is separated from China Proper by the Liau-tung range) surrounded by mountains, which drain off their waters from every possible direction into the very centre of this immense basin. The hydrography of the country presents in this respect a very remarkable feature, that of two rivers flowing from diametrically opposite directions, and then at right angles from their point of junction shooting off towards a third in a single stream. This is strikingly illustrated in the confluence or rather meeting of the Nonni River from the north-west, with the Girin from the south-east, both of which then by a combined action propel their united waters, under the name of Sungari, in a north-easterly direction. Comparing Mr. Williamson's notes with those of Father Palladius, we find that the first, adopting the theory of Wells Williams, who says that the Sungari rises in latitude 42°, positively states that the river which runs by Girin and Pe-tu-na to meet the Nonni is the head water of the Sungari, and that the Nonni is a mere tributary of the latter. Moreover, he makes this river enter Mongolia in latitude 44° 30' after passing Girin. This latter misstatement, however, we are inclined to regard as a slip of the pen. With reference to the respective claims of each of these streams to be considered as the parent stream of the great Sungari, or Ta-kiang, we find that the second, or Russian, traveller "considers the Nonni to be entitled to rank before the Girin-ula as the parent stream of the Sungari, as well on account of the greater volume of its waters as of the greater length of its course." Father Palladius must of course be accepted as the better authority on this subject, for while Mr. Williamson's travels did not extend up the Nonni, the Archimandrite travelled along that river up to Mergen. Strangely enough Colonel Veniukof entirely disregards the Archimandrite's authority upon this point, and falls in with the view of Mr. Williamson, through too blind a faith, doubtless, in the accuracy of Wells Williams. For our part, we will venture to say that, failing the necessary conditions for the formation of a large lake, the Sungari is the accidental escapement of the meeting of the Girin and Nonni, so that bearing in view also their respective courses, and the relative direction of the Sungari, they must be regarded as losing their identity in the latter.

Although mountainous at its extremities, the principal features of Manchuria are its plains and valleys. The plains are those of Liau-tung, of Nonni-Sungari, of the Lower Sungari, of the Lower Ussouri, and of the Sungacha (the basin of the Hankai Lake). The first of these constitutes the most densely populated district of Manchuria; the second plain is the broadest in extent; it commences from above Mergen, and stretching southwards along the Nonni, widens out to a vast expanse at the outflow of the Sungari River. This plain being almost perfectly horizontal, the Nonni flows very sluggishly, forming great lagoons of stagnating water, and making the surrounding lands generally swampy. Among the results of this slow current is the formation of quite an archipelago of islands at the outflow of the Sungari, and at the mouths of some of the tributaries of the Nonni. The valley of the Sungari contracting towards the north is one of undulating meadows, partially covered with forest growth. Within a distance of 135 miles from the junction of the Sungari with the Amur, this valley opens out again into a vast and seemingly boundless grassy plain, with a great proportion of morass. From the embouchure of the Sungari this is more or less the character of the country on both sides of the Amur, even beyond Habarofka, and up the left side of the Ussouri, as far as its affluent the Nor. In parts, the spurs of the Kantai mountains (a northern bifurcation of the Chan-Boshan) project up to the left bank of the Ussouri,

* Wells Williams estimates it at 700,000.

between the Nor and the Niman; but higher up this valley the lands are so level and depressed that they are often completely inundated by the overflows of the Muren and Sungacha Rivers. South of the Hankai Lake, the country is one of alternate hills and valleys, within the Russian limits. Here Manchuria is bounded by the well-forested Kantai Mountains, stretching northwards from the Tumen River in two parallel ranges: the main one extending along the western or left bank of the Muren River, and the inferior or more eastern range belonging, as Col. Veniukof says, in its entirety to Manchuria, and forming the boundary in this direction between the Russian and Chinese Empires.

Being situated between latitudes 39° and 49° N., Manchuria is in the same parallels as France and Italy. The country is well irrigated, and enjoys plenteous showers, and the vegetation is accordingly rich and varied. The climate, however, differs very much from that of the countries in corresponding latitudes in Europe—the experience of recent travellers and the results of their observations tending to prove that the summer heats are more moderate in Manchuria than in Southern Europe, and that the winter season is more rigorous even than in Northern Russia. The exhalations from the marshy lands moderate the heat in the summer, while they also occasion great falls of snow in the winter. In Northern Manchuria, above the 51° parallel, the winter lasts six entire months, from the end of October to the end of February. At the same time, in Southern Manchuria or Liau-tung—according to the Rev. Mr. Williamson—"the variation of the temperature is much more felt. In summer, the flat surface, hardened by the sun, reflects its rays, and in winter radiates the cold." The consequence of these conditions of climate is that the country abounds principally in forest and meadow. Of all the countries conterminous with Russia, Manchuria alone has no steppes of the Central Asian kind. In the north-western mountain districts (Daùria) the forests are composed of pine, fir, cedar, &c. In the basin of the Nonni, however, from the western slopes of the Great Hingan, the forest growth includes leafy varieties from the oak, black birch, lilac tree, and the maple, to the cork tree in the Kantai Mountains in the east.

This country is famous for the medicinal root called gin-seng *(Panax quinquefolium)*, which the Chinese pharmacopeists call orhota, or first of all plants—and which is prized by the Chinese above all the products of the earth, excepting diamonds and precious stones. This plant is now cultivated artificially, but is by no means scarce in the valleys of the Upper Ussouri, where it prefers recesses never visited by the rays of the sun. It is sought for by hundreds of Chinese, who obtain on an average about forty plants each, and a root five inches long is worth about five shillings. It is considered by the people as a panacea against all ill.* Khien-long in his famous poetic work written in the Chinese and Manchu tongues, and published in sixty-four different characters, speaking of the south-eastern portion (Shing-King) of his native country—the cradle of his race—describes it as "a surpassingly lovely alpine country, filled with recollections of the past, beautifully adorned with meadows, and superbly enriched with springs and rills of pure crystal water, enjoying a fine air, possessing many holy mountains, and inhabited by an unsophisticated, happy, and peaceful race of men. He pronounces it a classical land of patriarchal simplicity, honesty, and truth, lightened by the best of the stars, and protected by good genii. It is also the much praised land of Loh, the mother country of Kioro the Golden, the great ancestor of the Manchu sovereigns, so gloriously famous in Chinese tradition.

"The city of Mukden is as much distinguished from other cities as is the dragon from the tiger among beasts. The zephyr of the mountains which plays over the land, not alone softly hastens the opening of the buds and the blooming of the flowers, but also produces men who are destined to become the princes of the earth."*

Amyot, in his notes to Khien-long's rhapsody, has observed that Manchuria, and this part of it in particular, must nevertheless be considered as a wild, stern, uninviting, and almost uninhabitable region, infested by wild beasts. Mr. Semenof, in his volume of the Russian annotated edition of Ritter's *Erdkunde von Asien*, says that this account of it is doubtless a correct one,† but [Mr. Williamson has recently undeceived the world as to this notion, for he says of it, describing its loveliness, "It is not that barren, bleak, and lawless country generally supposed."

The principal occupation of the inhabitants of the country are agriculture and ship-building, which latter creates a lively business of various crafts. The ship-building is carried on chiefly at Girin and Tsi-tsi-har. The Girin, Nonni, and Sungari are alive with boats and junks. Mukden is in the principal centre of local industries; Girin, A-she-ho, and Ninguta ranking after it in this respect. The principal seaport town of Manchuria is Newchwang, on the Liau-tung River, the commerce of which place increased, between the years 1864 and 1868, from about 700,000*l.* to nearly 2,000,000*l.*, which shows its growing importance to English shipping. The imports, however, exceed the exports by a great deal, and the import trade with China Proper, chiefly conducted in foreign bottoms, is said to have developed more even than that with foreign or European countries. Judging from what he saw of Manchuria on three different occasions, Mr. Williamson believes it to be on the whole "a country of great promise."

Besides the river highways, which are exceedingly animated with traffic, there are a great many roads which connect Manchuria with Pekin. The roads leading from the Russian territories are those which connect Passiet harbour with Nanguta (395 miles); Vladivostok with Nanguta (about 200 miles, of which about 107 miles lie through Russian territory); the Ussouri with Nanguta (about 265 miles), the Ussouri with San-Sin (240 miles); the embouchure of the Sungari by San-Sin with Girin (491 miles), Blagovestchensk through Tsi-tsi-har with Girin (685 miles); these roads pass from the north and east into the heart of Manchuria. Manchuria is also accessible from the Aigun. Thus,

* Ravenstein's "Russians on the Amoor," *Quarterly Review*, July 1861.

* Semenof's *Manchuria and Mongolia*, Annotated Russian Edition of Ritter's *Erdkunde*, p. 19, vol. i. St. Petersburg, 1856; and see Williamson's "Notes on Manchuria," *Royal Geographical Journal*, 1869, where this same passage is epitomised.

† Semenof's *Manchuria and Mongolia*, Note 190, vol. i. St. Petersburg, 1856.

from the frontier town of Tsurukhutai one cart road leads direct to Mergen (318 miles), and another to Tsi-tsi-har (360 miles). These roads conduct over passes of no great altitude, for the Great Hingan Mountains are not known to exceed a height of from 5000 to 6000 feet. There are, however, other roads leading to the Nonni River over passes which are practicable for wheeled carriages. To the south of the Chal affluent of the Nonni the Great Hingan Mountains constitute the barrier between Manchuria and Eastern Mongolia, but to the north of that river's source, as far as the Amur, those mountains belong in their entirety to China; and it is across this northern section of the range that the roads leading from the Russian centre in Eastern Siberia pass into the Chinese province. "Throughout this extent of 650 versts," says Colonel Veniukof, "not less than three passes are known to us, and probably there are more." The passes in actual use are the following:—

a. From the Gan, an affluent of the Argun to the Kamara, a tributary of the Amur;

b. From the Khailar River to the Namin (a tributary of the Nonni), lately explored by Captain Kropotkin, and minutely described by that officer; "*this pass may be easily traversed by a light train of wheeled carriages;*" and

c. From one of the affluents of the Khailar to the Yal, a feeder of the Nonni; over this pass there exists a regular post road which runs from Tsi-tsi-har to Khailar, which was traversed by Isbrand Ydes, and, much later, by Mr. Lange.

The country has, as we have said, a population of about 12,000,000, located principally in the river valleys, and thickly congregated in the cities. The southern and more favoured portion of Manchuria is the most populous: it boasts 8 to 9 millions of people; yet the great centres of trade, even up to Tsi-tsi-har and San-Sin, have also a very large number of inhabitants. The population is mostly composed of Chinese, who fill all government offices and have so denationalised the Manchus, that the latter are fast losing the distinction of their caste. This is curious, and is of no small importance to the Russians. The Manchus seemed to have emigrated or followed their great leaders in early times to China, when they overran and conquered it. The vanquished have taken possession of the land of their conquerors, who do not even exercise any authority in their own country. Convulsions in China would thus be favourable to any designs of conquest from the north, the execution of which is further facilitated by the presence in Northern and Central Manchuria, of a large proportion of Tungans, or China-ised Muhammadans of the Turk race. These people are particularly numerous at Girin, Pe-tu-na, A-she-hoh, and San-Sin, and hold the Chinese, notwithstanding that they have adopted the habits and customs of the latter, in the greatest abhorrence. The Tungans are an energetic, healthy, and sober people, preserving a distinct feeling of nationality, and forming a compact body of great power and influence.

Mr. Veniukof says of Manchuria:—"A country with an area of 15,000 [? German] square miles, and with a population of 12,000,000, which is able to provide all the requirements of its own existence—a country which of all those beyond the Great Wall of China is most prized by the rulers of the great Chinese Empire—is the very country which deserves our special attention in military respects. It may be said that of all the Asiatic countries which are conterminous with Russia, this country alone can assume towards us a menacing, or *at the least*, an aggressive attitude—a circumstance all the more disadvantageous to us, because, owing to the sparseness of the population along the Amur, and the great distance of our line from the centres of our power, the Amur country is left open to attack . . . . . History has shown that the Chinese have once gained the ascendancy over us in that quarter."

Colonel Veniukof then enters into the number and the distribution of the forces in Manchuria, pointing out their formidable strength, and the great weakness of the Russian *lines of defence.** He says: "The Chinese have 37,539 officers, soldiers, and sailors in Manchuria; and that if the Government of Pekin were to commence now to reorganize this army, as it has done with the army in China Proper, where the troops are armed with rifles, this force would be more than sufficient to place us in a very difficult position, after a first collision on the Amur. We have not a single fortified depôt of arms in the whole of the Amur region."

The vulnerable points along the Russo-Chinese frontier are—on the Argun, between Abaigatu and Aigun, where parties of horsemen could inflict a great injury on the Russians; at Aigun and Blagovestchensk, which latter could easily be demolished by artillery from Amba-Saghalien; at the embouchure of the Sungari—the Chinese coming up from San-Sin,—and at numerous other points in the same direction.

The Chinese might also, with equal ease, seize the Russian maritime province, aided by the Coreans, who decline up to the present day to have any dealings, private or official, with the Russians.

Whatever roads the Chinese might adopt for aggressive operations against the Russians they would always have the great advantage of falling back, in the event of a repulse at any quarter, through countries where they would always find abundant supplies. Moreover, in falling back they would but concentrate in the towns in their rear, the nuclei of their strength and material resources.

"In the event of hostilities with China," Colonel Veniukof observes, "we might occupy Khailar, Aigun, Hun-Chun, and even San-Sin, but it would be dangerous to penetrate farther. If we had a strong fleet on the Pacific, we might blockade the Chinese ports in the Yellow Sea, especially Newchwang, and so inflict a serious blow on Manchuria; but it must be remembered that the estuary of the Liau is shallow, and can be protected by submarine mines. After concentrating," he proceeds to say, "a sufficient force on the Amur, we might, if we wished to seize any Manchu territory easily, and with great advantage, occupy the strip of country watered by the left affluents of the Ussouri as far as the Kantai Mountains, where the Manchu population is sparse."

On the Ussouri, the Russians occupy an advantageous position for aggressive operations.† The right bank of

* The line of the Argun extends 440 miles, that of the Amur 1130 miles, and that of the Ussouri and Sungacha 419 miles; the frontier line from the latter river to the mouth of the Tumen is 227 miles in length.

† The largest Russian settlement and post in this direction is

the Ussouri, which is the most elevated, and along which the Russian military posts are stationed, commands the lowlands on the opposite side, and aggression seems at present to be more inviting from the eastern than from the western side of that line.

"Strategical considerations," Colonel Veniukof observes in conclusion, "should alone urge us to hasten the strengthening of our position in the Amur region; we should more especially promote the colonisation of that country, in order that we might not again subject that most precious of our Asiatic colonies to the fate it endured in the 17th century. Manchuria is not a neighbour like the Central Asiatic Khanats. We may expect great danger from that quarter." The question to which Colonel Veniukof has now drawn the special attention of his Government, has not, indeed, been neglected. A commission appointed to examine and to report upon the condition of that frontier line, has recommended many important measures, such as the removal of the centres of administration of the naval power to more commanding sites, and measures have been adopted which are calculated to induce Russians, and even natives adopting Russian nationality, to occupy the vacant lands on the Ussouri. The Cossacks, who were a plague, and even a source of danger, to everybody in the cities of Russia, have been sent out of the country in large bodies to find congenial occupation in Central Asia, and in the remote East. Their barracks now line the Ussouri and the seaboard of the Pacific, and these men, emulating the deeds of Khabarof, and other of their ancestors, invade with impunity the hunting-grounds of Daùria, and other ermine-stocked hill districts of Manchuria.

It remains now for the Russians to carry their point with regard to the right of ascending the Sungari, which has been always denied to them. Without doubt, however, the time is approaching, if it has not already come, with a pause in Central Asian advances, for settling this vexed question. For an increase of power on the Yellow waters will assuredly bring with it corresponding advantages. With a seaboard like that of the Sea of Japan, the acquisition of territories in the rear, with a view merely to insure inviolability, security, tranquility, repose, and all the other ingredients of happy possession, is one of the inevitable consequences of circumstances over which one has no control.

We propose in our next to deal with Colonel Veniukof's "Essay" on the Trans-Baikal or Khalka (Mongol) Section of the Russian Imperial frontier in Asia.

ROBERT MICHELL.

Tury-Rog or Voronej, on a spur of the hills at the north-east extremity of lake Hankai. It consists of thirty-two houses with 241 Russian inhabitants. Mr. Prjevalski, who passed nearly two years in that part of the Ussouri country in zoological and other studies and investigations, read a paper on the subject at a meeting of the Russian Geographical Society at St. Petersburg in 1870, in which he gave a glowing description of the beauties and capabilities of the maritime region. In this paper Mr. Prjevalski mentioned the discovery made by him in the ruins of two ancient forts on the rivers Chagny and Tundogir, not far from the Suifan River—of sculptured images of unknown beasts of the size of big dogs in red granite, a material which is not found in the mountains of the neighbourhood.

THE GERMAN ARCTIC EXPEDITION.*

IN the April number of *Ocean Highways* for 1873, we reviewed at some length the first volume of the general narrative of the German Expedition to East Greenland, or, as they prefer calling it, the second Arctic Expedition. Thanks to the courtesy of the editors, we have now before us another bulky and handsome volume of 467 pages, which forms the first portion of the systematic account of the scientific results of the Expedition. We have carefully examined it throughout; and, while disappointed in some respects by the comparatively poor results (in some departments) which the naturalists of the party have brought home, and by the manner in which some of the authors of the monographs contained in the volume treat the subjects entrusted to their care, take it as a whole, the volume, so far as it goes, is an admirable contribution to Arctic Natural History, and reflects credit on its eminent authors, and on the Bremen Society for Northern Exploration with whom the Expedition originated, and under whose fostering care the narrative of its discoveries is being published. It may be useful to examine the contents of the volume a little more in detail, more especially as the students of Arctic Natural History are, in England at least, so few that the value of the collections described may not be so thoroughly appreciated as they deserve to be.

The first portion of the book is occupied with the botany of the Expedition, edited by Professor Buchenau, of Bremen. After a few introductory pages by Dr. Adolf Pansch, of Kiel, one of the members of the Expedition, on the climate and plant life of East Greenland in general, Drs. Buchenau and Focke in a monograph of 50 pages, describe the flowering plants, ferns, and fern-allies brought home. The list seems meagre, comprising in all, and including some very dubious species, only eighty-nine. On the opposite coast, while occupied with many other duties, we obtained in little more than two months, about 120 species. The list given in this narrative comprises no new species, though it adds somewhat to our very imperfect knowledge of the flora of East Greenland. As showing the general nature of it, we select the list of species found on Sabine Island, one of the most northern localities in the list:—*Ranunculus glacialis, R. nivalis, Papaver nudicaule, Cardamine bellidifolia, Draba arctica, D. Wahlenbergii, D. alpina, D. muricella, Cochlearia* sp., *Silene acaulis, Wahlenbergia apetala, Melandrum affine, M. triflorum, Arenaria ciliata, Alsine rubella, A. biflora, Stellaria longipes, S. humifusa, Dryas octopetala, Potentilla nivea, P. emarginata, Epilobium latifolium, Saxefraga oppositifolia, S. cæspitosa, S. cernua, S. nivalis, S. Herculus, S. flagellaris, Taraxicum phymatocarpum, Campanula uniflora, Vaccinium uliginosium, Andromeda tetragona, Polemonium humile, Pedicularis hirsuta, Armeria maritima, Oxyria digyna, Polygonum viviparum, Salix arctica, Luzula hyperborea, Juncus biglumis, Carex fuliginosa, Eriophorum polystachyum, Alopecurus alpinus, Hierochlæ alpina, Catabrosa algida, Festuca vivipera, Poa arctica, P. cæsia, Equisetum scirpoides*, and *E.*

* *Die Zweite Deutsche Nordpolarfahrt in den Jahren*, 1869 *und* 1870 *unter führung des Kapitän Karl Koldewey*. Herausgegeben von dem verein für die Deutsche Nordpolarfahrt: Zweiter Band; Wissenschaftliche Ergebnisse. (Leipzig, F. A. Brockhaus, 1874).

arvense v. boreale (Bongard). The East Greenland flora, while poorer than that of the west coast, —judging from these collections—has thus a more European type. Professor Karl Müller, of Halle, next takes up the mosses, recording seventy-one species, including two new species, viz., *Grimmia Panschii* C. Müll., and *Gümbelia arctica*, C. Müll. The lichens, annotated by Professor Körber of Breslau, show a poor array of fifty-two species out of the between 300 or 400 which are known to be found in Greenland. Ten new species are recorded, viz., *Gyrophora Tramnitziana*, Kbr.; *G. Koldeweyi*, Kbr.; *Calopisma mydaleum*, *Rinodina Panschiana*, Kbr.; *Aspicilia rosulata*, Kbr.; *Buellia Copelandi*, *Buellia Payeri*, Kbr.; *Lecidella hansatica*, Kbr.; *Rhizocarpon inops*, Kbr.; and *Orphniospora grœnlandica*, Kbr.; the type also of a new genus. Here again the species collected on the shores of the opposite Disco Bay, on the west coast, are more than double in number, and excel it in novelties also, as recorded by Dr. Lauder Lindsay, in his treatise on the lichens collected by the writer of this notice. (*Linnean Transactions*, vol. xxviii.)—a work which though mentioned by Professor Körber, does not seem to have been studied by him. Oberfinanzrath Zeller, of Stuttgart, describes the *Algæ* brought home. They are all well known Arctic and Northern forms, and seem to show either that the regions visited by the Expedition are poor in species, or that this branch of botany was not fortunate enough to attract many collectors; for, including some species collected in South Greenland by the officers of the 'Hansa,' on their way home, after the loss of that ill-starred vessel, the list only reaches seventeen. Herren Bonorden and Fuckel describe the fungi which, notwithstanding the northern latitude, and the difficulty of preserving them for proper identification, are enumerated to the extent of about twenty species—several of which are described and figured as new. Professor Gregor Kraus, of Erlangen, devotes an elaborate monograph of thirty-four pages to an examination of the pieces of driftwood picked up by the Expedition. While recognizing the learning and industry of the eminent microscopist named, we cannot help thinking that this is "breaking a butterfly on a wheel," and that the whole is a piece of laborious trifling. There can be but little doubt that the driftwood found on the East Greenland coast comes almost entirely from the mouths of the Russian and Siberian rivers, and is carried over to the East Greenland coast, and thence round Cape Farewell up to about latitude 70° by the "Spitzbergen stream." Even did the fact admit of much doubt, it is impossible to make out the species of trees from which the worn pieces of driftwood came, by microscopic or other examination. The order, and even in some cases the genus, may be made out, but the allied species of different genera cannot be characterised by the form of the fibres, and the arrangements of the discs on them. To theorize regarding the currents, from such data, would be rash in the extreme. The same may be said regarding the value of another essay by the same writer, on the growth of some of the East Greenland woody plants—in which we find careful measurements of their stems, annual growths, &c. It is not without value, but is elaborated to an extent which the interest of the subject does not justify. This concludes the botany of the Expedition —137 pages in all. We turn to the zoological section, which opens with a brief introduction by the eminent ornithologist, Dr. Otto Finsch, of Bremen, to whom has been entrusted the subediting of this portion of the work under review. In all fifteen monographs are devoted to the animals collected by the Expedition, chiefly by Dr. Pansch, aided by Dr. Copeland, an Englishman naturalized in Germany, and now Lord Rosse's astronomer at Parsontown (Obersteurmann), and the first mate Lengstake. Dr. Pansch leads the way with a short essay on the anthropology of East Greenland. The Expedition met with no natives, though with frequent traces of them—mostly, however, of old date. In all likelihood there are now few natives on this ice-bound coast, most of them having removed to the south. Almost every year some wild-looking denizens of the regions to the eastward of Cape Farewell, come into one of the Danish southern settlements on the west coast, and stay there. A party who arrived some years ago declared that it was two years since they had left their homes in the far north. The glaciers of Melville Bay keep the kayak-less handful of natives now living in Smith's Sound from reaching the South; but there is no such obstacle to prevent the natives of the east coast from reaching those havens of plenty which they must all long ere this have heard of, in rumour at least, as existing in the milder and more genial region to the westward of "Umanarssuak" (Cape Farewell).* Most of Dr. Pansch's essay appeared in English, a few years ago, in *Fraser's Magazine*. Professor Peters, of Berlin, describes the mammalia and fishes of the Expedition. The first number fifteen species, and Professor Peter's remarks require no special notice, except that he does not altogether seem *au fait* in the recent literature of Arctic Mammology. We note, however, three remarkable animals in his list, viz., the musk ox, the lemming, and the ermine. The latter animal is entirely new to the Greenland fauna, and is another proof of the European character of the east coast zoologically as well as botanically, though curiously enough the species is made out to be *Mustela erminea* var. *putorius novaeboracensis* of Dekay (*Mamm. of North Am.* 1859, p. 166). Two specimens were obtained, and the traces of several others observed. The musk ox is a well-known Arctic animal, but is quite unknown to the fauna of West Greenland south of Wolstenholme Sound, the skull which Fabricius records in his *Fauna Groenlandica* as being found in East Greenland (and which he thought to be that of the yak) having in all probability drifted in ice from the north, for it is now known to exist on the Greenland shores of Smith's Sound. Kane heard traces of the animal; Hayes saw it; while the late American Expedition to that region saw twenty-six in latitude 81° 38′ north. Again, it has never been heard of on the south-eastern coast; but no sooner do we come to the east coast about opposite Wolstenholme Sound, than it appears in abundance, pointing to an extraordinary distribution of that member essentially of the American fauna. On Sabine, Pendulum, and Shannon Islands it was seen in herds of ten to twelve. Now it could never have crossed (in modern times at least) from Smith's Sound, over the ice-covered interior of

* See Klemschmidt's "Sinerissap Kavdlunâkarfiligtâ," the Eskimo map of Greenland.

Greenland. We are, therefore, almost forced to the conclusion that it must have found its way to the eastward by the northern shores of Greenland. At all events the presence of this animal in high latitudes on either side of the country, and yet not stretching to the south, is a remarkable fact in zoo-geography, and capable of giving rise to curious speculations. The lemming *(Myodes torquatus)* is also an interesting animal, though not so remarkable as the musk ox in its distribution. It was originally found, in 1823, on the east coast of Greenland, by Scoresby, and until recently his specimen was unique. It is in the Edinburgh Museum, where it was examined and identified by the writer in 1868 (see "Mammals of Greenland," *Proceedings of Zoological Society*, 1868); but it has never been found on the west coast. It is another member of the European fauna, though the species is identical with the Siberian one, again most probably only a variety of the European form. If the Americans have found it in Smith's Sound, then it adds, with the musk, a second anomaly in the geographical distribution of the Greenland fauna. The other mammals are the polar bear, the polar fox, the walrus, the saddle-back seal, the bearded seal (the ground seal of the English sealers), the bladder-nose seal, the Arctic hare, the reindeer—but whether the Greenland or European form, Dr. Peters unfortunately fails to record—the right whalebone whale (seen at a distance), the finback *(Balænoptera boops)*—doubtfully observed, the narwhal, and the bottle-nose ("Grinddeiphin," *Hyperoodon* sp. ?). Six species of fishes are only recorded, but one of them Dr. Peters makes out to be a new species of *Gadus (G. glacialis*, Ptrs.*)* from Sabine Island. The salmon he thinks *S. Hoodii*. This we would think rather doubtful, as *S. Hoodii* is an American species, and as the specimens on which this doubtful identification was made were both young, there is reason to think that they may be one or other of the five known salmon already described from Greenland. Hermann von Nathusius contributes some notes on the Eskimo sledge dog; while Drs. Finsch and Pansch describe the birds brought home. Thirty-one species in all are annotated, but none are of much importance—though the notes on their plumage, especially that of the ptarmigan, are of interest and value. Our own Professor Newton, of Cambridge, contributes notes on the eggs collected. No one is better fitted for the task, and none could have performed it better. Two species of Tunicata are described by Professor Kupffer of Kiel—one of them *(Cynthia Adolphi)* being new. The Mollusca Annelida, Echinodermata and Cœlenterata are described by Professor Möbius of Kiel. Of mollusca there are twenty-two species, but none new. Of worms, free and parasitic, eighteen are described, including *Leipoceras*, a new genus, comprising one species *(L. uviferum)*. The Echinodermata comprise one sea cucumber, a sea urchin, and four starfishes—all known before. Lastly, the Cœlenterata proper are two in number. The Crustacea, to the number of fifty-eight, are elaborately monographed by Dr. Buchholz, of Greifswald. This is perhaps the best portion of the volume before us. Six new species are described, viz., *Hippolyte incerta, H. Panschii, Pasiphaë glacialis, Leptophryxus mysidis* (new genus), *Parapleustes glacialis* (new genus), and *Paramphithoë megalops*, besides many rare or interesting forms.

The Arachnida have been committed to the competent hands of Dr. L. Koch, of Nürnberg. His task has not been an extensive one, for only one species was found amid the East Greenland snows, and that a new one *(Lycosa aquilonaris*, Koch*)*. The Hymenopterous and Dipterous insects are catalogued by Dr. Gerstäcker, of Berlin, with notes by Dr. Pansch. The Hymenoptera are three in number, while the Diptera are four; all the six species being well-known European forms. The Lepedoptera, catalogued by Alexander von Homeyer, of Schweidnitz, are six in number—one *(Dasychira groenlandica*, Wocke*)* being new to science. The Hydrozoa and Polyzoa are described by Dr. Kerchenpauer, of Hamburg. Of Hydrozoa there are four species, one being perhaps new. The species of Polyzoa are twenty-six in number, only one *(Hemeschara contorta)* being new.

The sponges are described by Professor Schmidt of Strasbourg, and Ernest Haeckel of Jena. They are eight in number—six being new, though rather imperfectly characterised by Dr. Schmidt, into whose division of work they have fallen—owing, however, it is just to mention, to the imperfect specimens entrusted to him.

Lastly, the veteran Ehrenberg describes and figures the microscopic animals and plants found in the soundings taken up by the Expedition. Nineteen beautiful plates, on stone and copper, illustrate the book, and, take it all in all, it is a noble work, worthy of the nation which despatched the Expedition, and one which must always be consulted by every student of Arctic zoology. It shows, moreover, how much is yet to be done in Arctic Natural History, by an expedition which—as in the case of the German one—numbered among its members properly trained and equipped naturalists. One word before concluding is due to the editors of this volume, Herren Moste and Albrecht, as well as to the scientific editors, Drs. Buchenau and Finsch. They have performed their difficult and delicate task of superintending the labours of so many eminent men working in different fields most judiciously and well; and we doubt not but that the next and concluding part of the scientific section of the work—geology, meteorology, hydrography, astronomy, geodesy, and terrestrial magnetism—will be performed in an equally satisfactory manner.

ROBERT BROWN.

DAHOMEY AS IT IS. By *J. A. Skertchly*. With Illustrations. London (Chapman and Hall), 1874.

THERE is an apparent—perhaps unconscious—satire in the title of this book. As lately as 1864 we received a mass of information respecting Dahomey from the pen of Captain Burton. The title of Mr. Skertchly's book seems to denote that he is anxious to paint the country as it is, and not as it is said to be; but in most respects the author bears willing witness to Captain Burton's accuracy, and his accounts pretty generally confirm our previous notions of Dahomey.

The object Mr. Skertchly had in travel was the collection of zoological specimens. With this view he attempted to explore the fauna of Whydah and its neighbourhood; but an invitation for eight days from Gelele, the king of Dahomey, induced him to travel up country to Kana. Here he was detained for eight *months* by the king, his Majesty being evidently desi-

rous of establishing a better reputation in England through the medium of Mr. Skertchly's pen. Although in several places the author censures the exaggerated accounts about Dahomey which have been circulated in this country, his general description will not fascinate readers. Above all, the human sacrifices, which amounted to eighty in number during his stay, are told with an amount of circumstance and detail which may perhaps be instructive, but are certainly sickening. The endless repetitions of ceremonies, too, are rather monotonous.

The following story respecting the thieving propensities of the natives is, however, too amusing to be passed over.—The negroes are very fond of anointing their bodies with fat, and to that end they will not scruple to steal the coveted grease. On one occasion on board the 'Astarte' it was discovered that the canoe men had been stealing the cook's fat. But a Nemesis was at hand. A pot of hot varnish stood close to the galley door, and the negroes spying this "fat" out, commenced to besmear themselves with the precious liquid. On returning to the vessel their passage along the sandy beach had converted them into as pretty a group of "asphalted" negroes as one could wish to see, and the drying of the varnish had been productive of anything but comfort. They never stole any more "fat."

We must not omit to notice some thoughtful remarks on the mental and social position of the negro, which corroborate the accounts furnished by Burton, Baker, and others. The volume is illustrated by some fair sketches of the author's taking.

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PETERMANN'S MITTHEILUNGEN.

EXPLORATION OF THE OLD BED OF THE OXUS.

IN the early part of July, 1873, a detachment under the guidance of Colonel Glukhofsky, set out from Khiva to Kunia-Urgenj, to investigate this interesting physical feature of the Trans-Caspian desert. From Kunia-Urgenj they followed the old bed for a distance of 200 versts, as far the Sary-Kamysch Lake. At the Dektcha Wells a junction was effected with the Caucasus surveys, which in 1871 were extended across the Ust-Urt. Colonel Stebnitzky had surveyed the old river bed from its mouth in the Balkhan Gulf for a distance of 281 versts, as far up as the Igdy Wells. The intervening part, which has not been examined, thus lies between Igdy and the Sary-Kamysch Lake, and is only about 200 versts in extent.

Glukhofsky's survey resulted in several interesting discoveries. The old river originally flowed in two channels now dry, called respectively Laudan and Kunia-Daria; the former being the shorter of the two. The Kunia-Daria winds about considerably between Kunia-Urgenj, and the Sary-Kamysch Lake. Its breadth averages about 1400 feet, and in many places the depth amounts to 120 feet. It is worthy of notice that the elevation of the bank on the right, and not on the left side, proves that the body of the current must have swept along the former side. Wells, varying from 5 to 20 feet in depth, have been dug at intervals of about 4 versts, and the water obtained is fresh; but as one nears the Aibugir Gulf of the Sea of Aral it becomes salt. The bed of the Urun-Daria is sandy; but in spite of this the climate is so moist, that all along its banks there grows a profusion of tamarisks, brambles, and other vegetation. Southwards, the country is sheer plain, but to the north, the edge or "chink" of the Ust-Urt plateau abuts on the plain. The Urun-Daria ends in the Sary-Kamysch Lake, which really consists of two lakes united by a small channel. There are well-defined traces of the banks having originally existed at a considerable distance outside of their present position.

A most interesting feature is the traces of former irrigation. The heads of numerous canals often 150 feet in breadth, are observable, and these served to feed smaller canals which conveyed the precious water off for the benefit of the corn-fields and gardens. This with the frequent ruins of towns and villages proves that agriculture once flourished and enriched the country. The ruins, however, are of those of two distinct periods, the earlier, strange to say, denoting a much higher civilization than the latter, which do not differ in character from the present dwellings of the Khivese.

Kunia-Urgenj was once the chief town of commercial importance in Khaurezm, and a trading mart between Europe and Asia. It was destroyed by Timur-Leng in 1388, and, though rebuilt, plundered by Ural Cossacks in 1603, and again destroyed towards the close of the 17th century by Aëomka, Khan of the Calmuck Tartars. The most conspicuous ruin is a tower of conical shape about 200 feet high, built of brick and covered with inscriptions. The summit is reached by an interior winding staircase.

Another building of interest, and still in tolerable preservation, is a summer palace of some former khan. It consists of a number of circular walls with vaulted roofs, lighted by two rows of casemates, the interior being most artistically decorated with relief arabesque work in gold and bright colours.

The ruins of Deu-Kissken, on a slope of the Ust-Urt, claim attention for the bold curvature of the arches, domes, &c., and their general massive character. The bricks used in the construction of the buildings are all of uniform shape, about a foot square: they are made with great care, are extremely durable, and give a metallic sound on being struck.

Colonel Glukhofsky and his officers came to the conclusion that no great engineering difficulty existed in the way of the water of the Oxus being conveyed back as far as the Sary Kamysch Lake, but whether it can be enticed into its old bed as far as the Caspian, can only be decided when the remaining 200 versts have been surveyed, and a complete series of levels carried along the whole length of the channel, down to the Balkan Gulf.

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EL DEPARTAMENTO DE ANCACHS Y SUS RIQUEZAS MINERALES. Por *A. Raimondi.* Publicado por Enrique Meiggs. Lima, 1873.

THIS handsome volume is the first fruits of the great statistical survey of Peru undertaken by Don Antonio Raimondi, under the auspices and at the expense of the Peruvian Government. Its early publication is, however, due to the public spirit and liberality of Mr. Meiggs, the great contractor. The first part treats of the geography and topography, the second of the geology, and the third of the mineral wealth of this important department of Ancachs. Every branch of statistics, in the widest acceptation of the term, is treated of, first with regard to the whole department, and then, in more detail, in dealing with each Province. A very remarkable feature in the physical geography of this part of Peru is the "Callejon de Huaraz," the long lateral valley between two chains of the Andes, watered by the River Santa, and at the northern extremity of which the river breaks through the mountain barrier, and dashing down a stupendous gorge, reaches the plain on the sea coast. This geographical feature is well described, and it is interesting as presenting an analogy to similar lateral valleys, such as those of the Indus and the Sutlej in the Himalayas. While this gazetteer of the Peruvian department of Ancachs is equal in all respects to those which have recently appeared in India, for instance those of the Central Provinces of Madura and Bellary; it is superior in several. It is printed on better paper, and with better type, and is illustrated by an admirably engraved map, which has been prepared with great care. We very heartily congratulate the Peruvian Government on the publication of this meritorious work, the first of a noble series which will, at last, furnish accurate knowledge of the topography and statistics of the land of the Yncas.

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HERR (O.) Die Schwedischen Expeditionen zur Erforschung d. hohen Nordens, 1870-73. 8vo., pp. 46. Zürich, 1874. 1s. 6d.

Cartography.

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Maps of India.

THE last parcel of new maps received from India is not as bulky as on some former occasions, but offers nevertheless several features of interest. It is gratifying, above all things, to be able to announce the publication of three new quarter sheets of the Indian Atlas,* for the scale and small cost of that work place it most readily within the reach of persons interested in Indian geography.

Quarter sheet 9, S.W., is from surveys made by Capt. J. MacDonald, Mr. W. Lane, and assistants, and embraces a portion of Khyrpoor (we retain in all cases the nomenclature of the maps, which in a good many cases, openly sets at defiance the orthographic edicts of the Government of India) and presents us with a region of sand-ridges with the features of which we have lately become familiarised through the sheets of the Sind Revenue Survey. The hills delineated on the sheet before us do not, however, present any of those peculiarities in their shape and direction which characterise those so ably described by Sir Bartle Frere in vol. xl. of the *Journal of the Royal Geographical Society*. Quarter sheet, 51 S.W., from surveys by Captains A. B. Melville, G. Strahan, and others, includes part of the country above the junction of the Parbati and Chambal rivers. There is some neat hill work upon it, and a remarkable semicircular ridge near the former of the two rivers named has attracted our attention particularly. Sheet 34, N.E., from surveys by Lieut. D. C. Vanrenen, Captain Strahan, and others, gives part of Ajmeer, but has been issued preliminarily, not being as yet quite finished.

The 1-inch maps of the Revenue Surveys have been increased to the extent of 5 sheets. Three of these refer to the district of Gonda in Oudh†, and are from surveys made in 1868-71 by Major F. C. Anderson and assistants. These maps are exceedingly minute, and abound in detail, but we regret not having been able to discover a single altitude upon either of them, which even in a level country would prove of value. The two other sheets of the Revenue Survey concern the district of Omomerkot‡ in Sinde. They are from surveys made by Mr. Lane in 1862-5, and like so many preceding sheets, they are covered with those endless ridges of sand hills, the delineation of which must have proved sorely troublesome to our Indian surveyors.

The additions to the one-inch maps of the Topographical Survey are even less numerous than those made to the Revenue Survey. The new sheet of that puzzle, the Ganjam and Orissa Topographical Survey,§ is from surveys made as long ago as 1858-61, by J. O. Nicolson and assistants.

The new sheet of the survey of the Central Provinces and Vizagapatam,‖ is by Colonel Paxton (1860-61 and 1870-71). To Lieutenant W. G. Murray we are indebted for an additional sheet of the Rewah Survey,¶ upon which the edge of the plateau bounding the Tamas and Beylund Rivers to the south is characteristically delineated; and that old and meritorious officer, Captain G. Strahan, with Mr. Hörst, has supplied us with a sheet of the Rajpootanah survey (1871-2),** the most remarkable feature upon which is the dry and wide bed of the Banas.

The officers of the "Topographical Survey" have furnished, in addition to the above, eight sheets of a large plan of Simla and Jutog,* which will be completed in twenty sheets if the plan laid down on the preliminary index-map is ultimately carried out. This survey, for which we are indebted to Captain G. Strahan, Mr. Hörst, Mr. W. Stotesbury, and Mr. F. Warde, and which was made in 1871-73, is being published in two editions, on scales of 24 inches and 16 inches to the mile respectively, but both produced by photo-lithography from the same original drawing. The map on the smaller scale is very clear; every detail stands out distinctly, and we cannot help thinking that the 24-inch map might have remained unpublished. There is no doubt that it is useful to possess surveys of certain localities on so large a scale, but in all these cases the hills should be shown by horizontal and equidistant contours, instead of by the stiff and conventional contouring applied to the map before us. The index to this survey offers more than we have a right to expect from it, for it contains a table of heights and a long list of names.

The district of the Pachmari Sanitarium, which lies at an elevation of 3481 feet above the sea, has been surveyed, in 1871-2, by Mr. W. Lane, and published on a scale of 1 inch to the mile.† There is an attempt made in this case of shading the hills in a characteristic manner, but it is successful only to a certain extent. In fact, horizontal contours ought to be laid down on every map published on so large a scale, even if it be only approximately, for such contours are the only trustworthy guide for a correct delineation of the ground. If horizontal contours are introduced and a scale of shading adopted and rigidly adhered to, there may certainly be a failure as regards artistic treatment or with respect to details, but the general features are sure to come out correctly. The officers in charge of the Indian Survey have at all times exhibited such zeal in the performance of their task, they have ever been anxious to improve their work to the utmost of their power, and we therefore trust that this question of contouring will engage their attention with a view to its introduction. By adopting such a ground-work for the delineation of the hills the Indian Survey will at once take its place by the side of the best European Surveys.

The remaining maps mentioned below‡ have been prepared at the office of the Surveyor-General in Calcutta for use during the military manœuvres to be carried on in 1873-4. The map of the district of Banda is a photo-lithographic reduction from the Indian Atlas; the others appear partly to be original compilations, but none of the maps will prove of interest except to military officers attached to the camps of exercise or studying the mimic warfare carried on in their neighbourhood.

Indian Famine Relief Maps.‖

WE have noticed in the last number of the *Geographical Magazine*, the publication of a Famine Relief Map

* Indian Atlas. Quarter sheets 9 S.W., 34 N.E. (imcomplete) and 51 S.W. Scale 4 miles = 1 in. Calcutta, 1873. 1s. 6d. each.

† Oudh Revenue Survey. Sheets 25, 26 and 27. Calcutta, 1873.

‡ Sindh Revenue Survey. Sheets 48 and 57. Calcutta, 1873.

§ Ganjam and Orissa Topographical Survey. Sheet 8 (old series). Calcutta, 1873.

‖ Central Provinces and Vizagapatam Agency Topographical Survey. Sheet 1 (new series). Calcutta, 1873.

¶ Rewah Topographical Survey. Sheets 10 and 11 (second edition). Calcutta, 1873.

** Rajpootana Topographical Survey. Sheet 42. Calcutta, 1873.

* Topographical Survey of India, Simla, and Jutog. Scale 24 inches to the mile. Sheets 1, 2, 3, 4, 5, 8, 9, and 10. Calcutta, 1873. (To be completed in 20 sheets.)

The same. 16 inches to the mile. Same sheets. Calcutta, 1873.

Preliminary Index to the sheets of the Topographical Survey of Simla. Scale 3 miles to the inch. Calcutta, 1873.

† Pachmari Sanitarium, district Hoshungabad. Scale 4 inches to the mile. Complete in one sheet. Calcutta, 1873.

‡ District Banda and parts of the adjoining districts and native states of Bundelkund, comprising the field of operations for the southern camp of exercise, 1873-4. Scale 4 miles to the inch. Calcutta, 1873. 2s.

Country between and around Kirwee and Kalinjer in the district Banda and the adjoining native states of Bundelkund. For the use of the southern camp of exercise, 1873-4. Scale 1 mile to the inch. Calcutta, 1873. 8s.

The same. Scale 2 miles to the inch. Calcutta, 1873. 3s.

‖ Map of the Rajshahee Division. Famine Relief Map. Scale 8 miles = 1 inch. Calcutta (Suveyor-General's Office) 1874. 4s.

of the Patna Division. Since then we have received maps of the Rajshahee and Bhaugulpoor Divisions, on a scale of 8 miles to the inch, and of the districts of Sarun and Bhaugulpoor on double that scale. These maps are in all respects similar to the map of Patna already noticed. They exhibit the position of the Government grain stores, the centres of charitable relief, the routes for the conveyance of Government grain and the relief works undertaken or proposed, and are exceedingly valuable to all those interested in the disaster which has come upon our Indian fellow subjects.

Map of Jamaica.*

OUR most valuable Map of Jamaica (irrespective of Admiralty Charts) has been that of James G. Hawkins and Charles B. Brown, which is drawn on a scale of 1:253,440, and is coloured geologically. This map has now been superseded to some extent by the one prepared by Mr. Thomas Harrison, the Colonial Government surveyor, which is drawn on a scale of 1:171,000, shows the boundaries down to those of parishes, the main and parochial roads, railways, villages, and "parish towns," stations, schools, churches, chapels and plantations. There are no hills, but this deficiency it is to be hoped will be supplied on some future occasion. The map has been neatly engraved at Mr. Stanford's establishment, and we trust that the example of the Colonial Government of Jamaica, in publishing a map of this kind, will find imitators in other colonies. The area of Jamaica has been a subject of dispute for some considerable time. In the *General Report of the Census of* 1871 (vol. iv., p. 244), we find it stated to amount to 6400 square miles, and this notwithstanding that the area had been computed several years ago at Perthes' geographical establishment from Hawkins' map, and the result (4251·25 square miles) published in the *Mittheilungen*. On the map before us we find the following statements of area, which we trust compilers of year books and geographies will accept as a final settlement of the question :—

Cornwall	1505¼	square	miles.
Middlesex	1920	,,	,,
Surrey	767½	,,	,,
		,,	,,
Total for Jamaica.....	4193	,,	,,

E. G. RAVENSTEIN.

New Maps.

Generalstabskarte von Preussen. 1:50,000. No. 30. (Cöpenick). Berlin, 1874. 5d.

Generalstabskarte von Preussen (General Staff Map of Prussia). 1:100,000. No. 106. (Passenheim). Berlin, 1874. 1s.

Messtischblätter vom Preussischen Staate. (Plane table sections of Prussia, surveyed by officers of the General Staff, published by the Board of Trade). Scale 1:25,000. Sheets 84 to 87, 99 to 102, 141 to 145, 155 to 159, 169 to 176. Berlin, 1874. 1s. each sheet.

Karte vom Mansfelder Gebirgskreis. (Map of the Mansfeld hill district in the Province of Merseburg.) 1:100,000. Eisleben, 1874. 2s.

Erhard, Mapa General de la Republica de Mejico. Paris, 1874.

Map of the Bhaugulpoor Division. Famine Relief Map. Scale 8 miles = 1 inch. Calcutta, 1874. 2s.

Map of the Sarun District. Famine Relief Map. Scale 4 miles = 1 inch. Calcutta, 1874. 2s.

Map of the Bhaugulpoor District. Famine Relief Map. Scale 4 miles = 1 inch. Calcutta, 1874. 2s.

* Map of Jamaica, prepared from the best authorities under the direction of Major-General J. R. Mann, R.E., Director of Roads and Surveyor-General, by Thomas Harrison, Government Surveyor. Kingston (Jamaica), 1873. Scale 1:171,000.

Log Book.

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Renewal of Arctic Exploration.—Commander A. H. Markham, R.N., the commander of H.M.S. 'Sultan,' who recently returned from a summer cruise in Baffin's Bay and Prince Regent's Inlet, read a paper on Monday, the 27th, on the renewal of Arctic Exploration, in the lecture theatre in Portsmouth Dockyard, before a crowded naval audience. He gave a most interesting detailed account of the change that steam has caused in ice navigation, and of his own experiences; and furnished the clearest information that has yet been accessible in England, respecting the reports of the officers on board the 'Polaris,' on the character of the ice in Robeson Strait. He also explained the reasons why the Smith Sound route is the one which must be adopted for an Arctic Expedition, and why it is unanimously advocated by all officers who are practically acquainted with the subject. The reception of Captain Markham's paper leaves no doubt of the enthusiastic feeling which prevails in the navy in favour of the renewal of Arctic exploration.

The Seal Fishing.—The 'Arctic,' commanded by Captain Adams, sailed from Dundee on the 28th of last February, and reached the ice on the 21st of March; and, proceeding to the south-west under steam, passed through very heavy ice. The following has been the take of the Dundee ships :—

	Seals.	Tons of Oil.		Seals.	Tons of Oil.
'Arctic'	9500 ...	100	'Erik'	3100 ...	45
'Ravenscraig' ...	6700 ...	70	'Narwhal'	3000 ...	28
'Esquimaux'	6000 ...	85	'Polynia'	1650 ...	28
'Active'	4200 ...	50	'Intrepid'	1300 ...	15
'Camperdown' ..	3300 ...	48	'Victor'	450 ...	10

In addition to the Dundee vessels, there were about thirty foreign ships at the edge of the ice, some of which were successful, while others had not secured a single seal. Of the Peterhead vessels :—

	Tons.		Tons.
'Hope'	45	'Jan Mayen'	25
'Eclipse'	35	'Windward'	20
'Labrador'	30		

The weather was generally very foggy, and the ice thin, so that the men frequently fell through. Two men belonging to the 'Camperdown' were drowned.

To all appearance, in the opinion of Captain Adams, the seal fishing is year after year becoming less hopeful and, of course, less remunerative. Owing to the great extent to which the seal fishing is prosecuted by vessels belonging to Scotland and foreign countries, the seals are gradually becoming scarcer, and the packs now met with are not at all to be compared with the very large proportions of the packs which might have been seen years ago. If the seal fishing is to be made really productive, the owners of seal-fishing vessels, in the opinion of Captain Adams, must protect the seals by observing a close season; otherwise the neglect of this will work its own cure. The propriety of observing a close season has several times been suggested, and it seems to be now more necessary than ever.

Scientific Investigation of the Northern Seas.—The Norwegian project of Professor Mohn,

of Christiania and M. Sars, for the scientific examination of the sea between Norway, Faroe, Iceland, and Spitzbergen has been very favourably received by the Government. The scheme has been submitted for practical suggestions to the Norwegian Admiralty, the University, and the Chambers of Commerce of the principal commercial towns. The scheme will be presented to the Storthing of 1875, in order to obtain the necessary grant of money.

Reward for Tidings of the Austrian Arctic Expedition.—Count Wilczek, the Austrian traveller, has announced his readiness to give a reward of a thousand florins (100*l.*) to any one who will bring home any news of the Austro-Hungarian Arctic Expedition. The 'Tegethoff' steamer, with the members of the expedition on board, was last heard of on the 21st of August, 1872, off the north-western coast of Novaya Zemlya, in about 76° N. latitude, when Count Wilczek himself parted company with them and sailed southward in his yacht 'Isbjörn.' The 'Tegethoff' intended to push along the northern coast of Siberia, and return before the end of three years (for which period they were provisioned), by way of Behring's Straits; but nothing has been heard of her, and Count Wilczek hopes by promise of the above reward to spur on some hardy British or Norwegian whaler or seal hunter to the search. If, as has been suggested, the expedition found itself compelled to enter in Novaya Zemlya, traces of this might easily be found, and the reward will be equally forthcoming for this discovery. We commend the above to the notice of the Dundee and Peterhead press.

Paris Geographical Congress, 1875.—At the approaching Geographical Congress, to be held in Paris in the spring of next year, all foreign societies are invited to send representatives, and all geographers and travellers of note are earnestly solicited to attend. The Congress will be divided into six groups, viz., mathematical geography, including terrestrial and marine surveying; physical geography and meteorology; historical geography and ethnology; economical and statistical geography; the teaching and diffusion of geographical knowledge; and, lastly, explorations and travels. The different sections or groups will be under the superintendence of names well known in each particular branch, and the Congress itself will be under the presidency of Admiral le Baron de la Roncière le Noury. There will also be an exhibition of apparatus and appliances bearing on the study of geography, and prizes will be adjudged for the most meritorious of these.

The Council of the Royal Geographical Society, appreciating the importance of this event, have appointed a committee, consisting of Lord Houghton, Admiral Ommaney, and Mr. Francis Galton, to consider and report upon the best means of co-operating with the promoters of the Congress.

The Hydrographic Commission of the Amazon.—Admiral Tucker, of the Peruvian Navy, has submitted a most interesting report on the proceedings of the Commission over which he presides, in exploring the tributaries of the Amazon, dated at Yquitos on December 16th, 1873. Two steamers, the 'Tambo' and 'Mayro,' having been placed under his orders, he embarked on the 17th of September, with Lieutenant Rochelle, Surgeon Galt, and two other officers, on board the 'Tambo,' with a chronometer and other instruments. Lieutenant Butt commanded the 'Mayro,' and was ordered to explore the river Nanay. The 'Tambo' went down the Amazon, to commence work at the Brazilian frontier. Admiral Tucker remained for some days at the mouths of the Yavari, to fix their position exactly. Astronomical observations were then taken at various points along the main stream, between the Yaravi and Yquitos. Having returned from the Nanay, the 'Mayro' left Yquitos again on the 27th of October, to explore the rivers Morona, Potro, Pastaza, and Tigre. The 'Tambo' also ascended the main stream to a point called "Punta-Achual," above which the navigation becomes difficult. In the latter part of December the 'Tambo' ascended the river Huallaga, determining the position of Yurimaguas, and other important points. On the 29th, Admiral Tucker arrived at Rumi-Callarina, which he considers to be the furthest point for steamers. He fixed its astronomical position with great care. A road is being constructed from Tarapoto to Rumi-Callarina, which does not present serious engineering difficulties. The banks of the Huallaga are high and free from inundations, so that they are suitable for agricultural enterprises. The 'Tambo' returned to Yquitos on the 6th of December. The 'Mayro' returned from her exploring expedition a few days earlier; after having ascended the river Tigre for 104 miles, and the Morona, Pastaza, Potro, and Itaya for some distance. The following are some of the most important positions that were fixed:—

	South.	W. of Greenwich.
Mouth of the Yavari	4° 18′ 45″	69° 53′ 10″
Loreto	3° 54′ 20″	70° 7′ 45″
Yquitos	3° 44′ 15″	73° 7′ 30″
Mouth of the Yucayali	4° 28′ 30″	73° 21′ 30″
Nauta	4° 31′ 30″	73° 27′ 0″
Punta Achual	4° 15′ 27″	77° 1′ 28″
Yurimaguas, on the Huallaga	5° 51′ 55″	75° 59′ 58″
Rumi-Callarina	5° 58′ 32″	75° 47′ 32″

Very careful observations were also taken of the current at numerous points, and a series of meteorological and hypsometrical observations.

Death of the President of Bolivia.—We regret to announce the death of Colonel Adolfo Ballivian, the accomplished President of the Bolivian Republic, which took place on the 14th of last February. He only entered upon his office on the 8th of May, 1873, having previously been Financial Agent for the Republic in Europe, and Minister to the Argentine Confederation. He was little over forty years of age, and was an enlightened and educated statesman. He is succeeded, provisionally, by Dr. Tomas Frias.

Bolivian Archives.—Don Vicente Ballivian y Roxas, a relative of the late President, has commenced the publication of a most valuable and interesting series of inedited documents relating to the history of Upper Peru—the modern Bolivian Republic. The first volume, which has been published at Paris, contains a diary of the Siege of La Paz, by the insurgent Indians, in 1784, the annals of the town of Potosi, from its foundation to 1702, and a catalogue of printed and manuscript works relating to Upper Peru during the period of Spanish domination. This list has been carefully prepared, and is invaluable to historical or statistical enquirers.

Proceedings of Geographical Societies.

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ROYAL GEOGRAPHICAL SOCIETY.

April 13th, 1874.

DR. LIVINGSTONE.

THE PRESIDENT took the chair at 8.30 p.m. Among those present were Sir George Back, Lord Cottesloe, Sir Walter Stirling, Major Wilson, Sir Robert Peel, M.P., the Hon. C. D. Plunkett, Captain F. Clark, and Colonel Henderson.

The Chairman, on rising, said before they proceeded with the general business of the evening, he was sure they would wish that he should state briefly what had occurred since they last met with regard to that respect they all desired to pay to the remains of the great traveller who had just passed from among them. Since the last meeting those remains had arrived close to the native shores of the deceased, and they were expected to be landed the following morning. Up to the present moment, however, the steamer had not been signalled. Many members of the Royal Geographical Society and of the Council were, therefore, not present that evening, as they had been detained with those who represented Dr. Livingstone's family at Southampton, with the view of receiving the remains as soon as they should be landed. So soon as they arrived they would be brought up to London and duly received, and made over by the order of the Government to the representatives of the family and certain gentlemen selected from among members of the Council to act for the Royal Geographical Society. Colonel Grant, who, as they all knew, was a veteran African traveller; Mr. Horace Waller, an old companion of Dr. Livingstone; and Mr. Hutchinson, representing the Church Missionary Society, and whose servants did such excellent work as companions of Dr. Livingstone during his last travels; joined with Mr. Webb, an old and tried companion of the doctor, were named by the family to represent them, and to be the exponents of their wishes in everything connected with the obsequies of the great traveller. Her Majesty's Government had come forward, he must say, with the most willing spirit, so soon as they knew the facts of the case, to undertake the charge, at the public expense, of the funeral of Dr. Livingstone, and they requested that the Committee of the Royal Geographical Society and those who had been named by the family to represent them, would take charge of the details of the funeral and act on behalf of the Government. They had also placed a sum at the disposal of the Royal Geographical Society, which he trusted would be found sufficient for all purposes. All present, he felt certain, would feel deeply interested to know that the general feeling of Dr. Livingstone's countrymen was well expressed by a merchant of the City of London, who, through Mr. Russell Gurney, volunteered to pay the whole expense of the funeral, whatever it might be. Her Majesty's Government, however, had determined, and he thought everyone would think they had rightly determined, that the expense of the funeral should be borne as a public charge—and Saturday, the 18th, had been selected by the Dean of Westminster as the fittest day for the funeral to take place, and by that time he (Sir Bartle Frere) trusted all the necessary preparations would be carried out. There would, of course, be considerable difficulty in providing accommodation for all those who would wish to be present at the funeral, but he could assure those present that the gentlemen who undertook the management of the matter on behalf of the Fellows of the Royal Geographical Society and those who represented the family would not be wanting in doing all they could to enable not only every member of the Society, but all those who shared their feelings towards the deceased, to show their respect for the great man who had recently departed from amongst them. It was not proposed that evening to do more than to set forth in a very brief manner what had hitherto been done to do honour to Dr. Livingstone's memory. There would be read a letter received from Mr. Holmwood, who was assistant to the Consul-General at Zanzibar, and in which he gave a brief account of what he knew regarding the last travels and days of the illustrious traveller. That account of course was only a brief sketch. He might say, however, that there had been an immense mass of information brought safely to England respecting the labour in which the latter years of his life had been passed, and he had every reason to hope that information would throw ample light upon all his wanderings—their persistent direction towards one great end, and the unflinching courage and perseverance he had displayed towards arriving at that end. He believed that when his literary remains were brought home, laid together, and examined by competent geographical authorities in this country, they would form a monument to his memory such as no traveller for ages past had left him. He would not detain them any further upon that topic. All he regretted was that time did not admit of further debating on what they might expect to hear in greater detail and more perfect form in the course of the session. It was the unanimous wish of the Council of the Royal Geographical Society to embrace the earliest possible moment for collecting all the letters and papers placed at their disposal, in order that they might be available to the public through the *Proceedings of the Society*. A day therefore as early as possible would be fixed on which some of the more prominent papers would be read before the Society. He would now ask Mr. Markham to read the paper from Mr. Holmwood.

Mr. MARKHAM then read the following letter:—

MAJWARA'S ACCOUNT OF THE DEATH OF DR. LIVINGSTONE.

"Zanzibar, March 12th, 1874.

"My dear SIR BARTLE—No doubt you will hear from several interested in Dr. Livingstone; but, as I do not feel sure that any one has thoroughly examined the men who came down with his remains, I briefly summarise what I have been able to glean from a careful cross-examination of Majwara, who was always at his side during his last days; and Susi, as well as the Nassick boys, have generally confirmed what he says. I enclose a small sketch map,* merely giving my idea of the locality, and have added a dotted line to show his route during this last journey of his life.

"The party sent by Stanley left Unyanyembe with the Doctor about the end of August, 1872, and marched straight to the south of lake Tanganyika, through Ufipa, crossing the Rungwa River, where they met with natural springs of boiling water, bubbling up high above the ground. On reaching the Chambezi, or Kambezi River, they crossed it about a week's journey from lake Bemba, also crossing a large feeder; but, by Susi's advice, Livingstone again turned northward, and recrossed the Kambezi, or Luapula, as he then called it, just before it entered the lake.

"He could not, however, keep close to the north shore of lake Bemba, owing to the numerous creeks and streams, which were hidden in forests of high grass and rushes. After making a detour he again struck the lake at a village, where he got canoes across to an island in the centre, called Matipa. Here the shores on either hand were not visible, and the Doctor was put to great straits by the natives declining to let him use their canoes to cross to the opposite shore. He therefore seized seven canoes by force, and when the natives made a show of resistance, he fired his pistol over their

* This has not been received.

heads, after which they ceased to obstruct him. Crossing the lake diagonally, he arrived in a long valley, and the rains having now set in fully, the caravan had to wade rather than walk, constantly crossing blind streams, and, in fact, owing to the high rushes and grass, hardly being able to distinguish at times the land, or rather what was generally dry land, from the lake.

"Dr. Livingstone had been weak and ailing since leaving Unyanyembe, and when passing through the country of Ukabende, at the south-west of the lake, he told Majwara (the boy given him by Stanley, who is now in my service) that he felt unable to go on with his work, but should try and cross the hills to Katanga [Katanda?], and there rest, endeavouring to buy ivory, which in all this country is very cheap (3 yards of merikini buying a slave or a tusk), and returning to Ujiji through Manyueme to recruit and reorganise. But as he approached the northern part of Bisa (a very large country), arriving in the Province of Ulala, he first had to take to riding a donkey, and then suffer himself to be carried on a kitando (native bedstead), which at first went much against the grain. During this time he never allowed the boy Majwara to leave him, and he then told that faithful and honest fellow that he should never cross the high hills to Katanda. He called for Susi, and asked how far it was to the Luapula, and on his answering 'three days,' remarked, 'he should never see *his* river again.'

"On arriving at Ilala, the capital of the district, where Kitambo the Sultan lived, the party were refused permission to stay, and they carried Livingstone three hours' march back towards Kabende. Here they erected for him a rude hut and fence, and he would not allow any to approach him for the remaining days of his life except Majwara and Susi, except that every morning they were all desired to come to the door and say 'good morning.' During these few days he was in great pain, and could keep nothing, even for a moment, on his stomach. He lost his sight so far as hardly to be able to distinguish when a light was kindled, and gradually sank during the night of the 4th May, 1873.

"Only Majwara was present when he died, and he is unable to say when he ceased to breathe.

"Susi, hearing that he was dead, told Jacob Wainwright to make a note in the Doctor's diary of the things found by him. Wainwright was not quite certain as to the day of the month, and as Susi told him the Doctor had last written the day before, and he found this entry to be dated 27th April, he wrote 28th April, but on comparing his own diary on arrival at Unyanyembe he found it to be 4th May; and this is confirmed by Majawara, who says Livingstone was unable to write for the last four or five days of his life. I fancy the spot where Livingstone died is about 11° 25′ S. and 17° E.; but, of course, the whole of this is subject to correction, and, although, I have spent many hours in finding it all out, the Doctor's diary may show it to be very imperfect.

"I fear you will find this a very unconnected narration, but my apology must be that the Consul-General is not well, and the other assistant absent on duty, and there is much work for me to do. Mr. Arthur Laing has been entrusted with the charge of the remains and diaries, which latter he has been instructed to hand to Lord Derby.

"Trusting you are in the enjoyment of good health, and with great respect,—Believe me, dear Sir Bartle, your most obedient servant,

"FREDERICK HOLMWOOD."

The CHAIRMAN then introduced Mr. LAING to the meeting. That gentleman stated that up to half-past five o'clock there had been received no news of the arrival of the remains. The Peninsula and Oriental authorities seemed to think it very doubtful whether the vessel with the remains would get in before the next morning. On his journey from Zanzibar to Suez he had the opportunity of conversing with Mr. Wainwright, but there was but little to add to the account they had already heard. Wainwright had told him, however, that the Docter paid great attention to his boys, and was much beloved by all of them, and when any of them were sick he would wait two or three days for them on his journey. The Doctor, however, would not wait, and when he was seen to be failing the boys put him in a kantanju and carried him along. He (Mr. Laing) had hoped that Wainwright would have been there that evening to have given full particulars, as he read, wrote, and spoke English very well, and from the time of Doctor Livingstone's death until he arrived at Zanzibar he kept a full diary.

Mr. ASHTON W. DILKE then read his paper

ON THE VALLEY OF THE ILI, AND THE WATER-SYSTEM OF RUSSIAN TURKISTAN.

The shape of the valley of the Ili, like that of the present Khanate of Kokand, which it resembles very closely, is eminently calculated to make it play a very important part in the development of Russian Turkistan. At present the political situation of the country prevents the Russians from paying such attention to it as they probably will when some arrangement has been made with the Chinese; for, as yet, the Russians only consider themselves as holding Kuldja with the view of restoring it to the Chinese, if the latter ever regain their footing in Kashgar or the neighbouring parts of Mongolia, which is very doubtful. The natural frontier seems to be the watershed of the Ili, which is one of the seven rivers which give their name to the country, and which is cut off from the remainder of China by extremely abrupt mountains, and opens out only in the one spot where the Ili finds its outlet to the Balkash. I was unable to find any accurate maps or measurements of the district of Kuldja, but I saw enough to be convinced that all our present maps are exceedingly inaccurate, especially in the point of representing the breadth of the valley too great in comparison with its length. The valley rises in a gentle slope from the Ili, which flows nearly in the centre of it to the mountains on either side, which are not more than 50 miles apart, while from the commencement of the valley at Altyn-Emel to old Kuldja, the chief Russian port, is a distance of about 170 miles, according to the distances in the postal register; and from the latter town the mountains to the east can only be seen in bright weather at sunrise or sunset, which, calculating as usual in this dry air, gives a distance of about 120 miles, making the total length of the valley nearly 300 miles, or about six times its breadth. The mountains to the north of this plain rise to a height of some 12,000 feet, and are tipped with snow in July. There are two main roads across them: one from old Kuldja direct to Jin-Ho, about 160 miles, but with a waterless passage of nearly 70 versts in the centre; the other is the old Chinese post-road, from the ruined capital of New Kuldja, through Souidoun, one of the other Russian ports, to the valley of Talki, up which it runs a distance of 20 miles to lake Sairam-Nor, which lies at a height of over 7500 feet. The road was evidently kept in excellent repair by the Chinese, as the remains of bridges and post-stations, which are frequently met with, prove. It is now only used by the Kirghiz, who live in summer in the mountains, and by an occasional caravan going to Manas or Urumtsi. Sairam-Nor lies in extensive pastures, which are watered by the melting of the snows in the mountains on the western side, though as the lake never rises or falls, in spite of the considerable mass of waters which it receives, the Kirghiz have invented the usual theory of a subterranean outlet, which nothing seems to justify. Standing on the southern side of the lake, where the Talki Pass comes on to it about 500 feet above its level, we see the openings of three valleys: the first, beginning from the right, is that of the Kizim Chik, a narrow and

very lovely ravine, running down to Mongolia on the northern side of the mountains which separate Kuldja from Jin-Ho, nearly up to this latter place; then, still on the right or eastern side of the lake, is a valley along which the Chinese road finds its way—a broad waterless valley, only marked on the latest Russian map as a "Dry Valley." It runs parallel to that of the Kizim Tchik, and leaves the mountains not far from the spot where the latter also does, close to the little town of Takianzi, and within sight of Jin-Ho. Exactly opposite the entrance of the Talki Valley on to Sairam-Nor is a break in the mountains, about 20 miles distant across the lake and close to its shore, which allowed me to catch a beautiful glimpse of the long chain of the Northern or Chungurski Alataon, close to Lipsa, across the deep valley of the Baratola, which gives the idea of some unfathomable gap between the nearer dark mountain range and the bright peaks beyond it. The mountains are almost everywhere 3 or 4 miles, and in some places recede 10 miles from the lake, which is about 60 in circumference, and the effect of its blue depths, set in green meadows, with the black forest-clad mountains all round running up to snowy heights beyond, is extremely lovely.

The valley of the Kizim Chik, which I descended, is either very narrow or very broad, as it may be taken—*i.e.* the distance between the snowy peaks on either side is considerable, as we saw whenever we got a glimpse out of our prison below; but the little stream itself is blocked in a ravine full of the most luxuriant vegetation, from which cliffs, in many places 1500 feet in height, rise perpendicularly, and effectually bar the view. The valley at length grows broader and the cliffs become bare masses of brown sand, quite abrupt and of some elevation, but bare of vegetation, and terrible reflectors of the scorching sun. Phalangas and tarantulas swarm. At length, after about 80 miles, the valley opens out into the plain. To the south, not far off, are the snowy mountains between the upper valley of the Ili, or rather that of the Kash, and Jin-Ho: the latter town appears under a promontory of the mountains as a mass of green reeds, and to the extreme left I thought that I could distinguish the lake Ebi-Nor, though the haze and mirage may have misled me. The Kizim Chik River, here about 15 yards in width and 4 feet deep, makes a sudden bend to the north, and either loses itself in sands, or, when full of water, reaches the Baratola in a marsh, when the latter is almost indistinguishable from the Ebi-Nor. The lake is extremly salt and bitter, very shallow, so that it is possible to ride out some distance in it, and surrounded by beds of salt and reeds, musquito and fever-haunts. Though it receives the Baratola and the Kar-Kara-Usa, two large rivers, the natives assert that it is drying up rapidly, as, in fact, all the salt lakes here are doing, the Balkash and Ala-Kul having been connected no long time back. The valley of the Baratola is formed by the union of three considerable rivers, which rise in the corner of the Alataon, near Kopat, and flow nearly 130 miles before falling into the Ebi-Nor.

Returning to the valley of Kuldja, I may briefly mention that it is intended to introduce two little steamers on to the Ili this year in all probability, though the distance from Semipalatinsk, on the water-system of Siberia, to the Balkash, is so great as to make it doubtful whether anything would be saved by them. The wealth of coal in the valley is immense, and the Chinese are known to have worked silver and gold with great profit; but it must be remembered that they had the advantage of slave labour, and that capitalists will be chary as yet of embarking in ventures on the Ili. I had no less than three offers made to me, in my quality as an Englishman, of untold riches and gold mines of fabulous extent, if I would only find the capital.

The Ili, which opposite Kuldja is about a quarter of a mile in breadth, and both swift and deep, is formed by the union of three main tributaries, the Kash, the Kunges, and the Tekes. The Kash joins it not far above Kuldja, near a high butte or isolated hill, which forms a landmark for the whole plain: it flows from east to west as does also the Kunges; but in spite of this, the Tekes, being the most considerable of the three, is generally considered as the Upper Ili. It rises not far from Issyk-kul, between that lake and the Musart Pass to Aksu, which lies under Khan-Tengri, the highest peak of the Thian-Shan, and flows nearly due east for about 100 miles, bending to the north round the last spurs of the Trans-Thian Alataon about 70 miles from Old Kuldja, at its junction with the two above-mentioned rivers. The valley of the Tekes is uninhabited, except by a few nomad Kirghiz and Kalmucks, and by panthers and wild boars, with occasional tigers, who find shelter in the enormous reed-beds which border the river. The valley is, on an average, about 40 miles in breadth, but decreases very rapidly near the Musart, where it enters the mountains.

In passing from the Tekes to Issyk-kul I crossed the watershed of the Charyn, which flows through a break in the Trans-Thian Alataon into the Ili, which is here only some 70 miles distant in a straight line, and further on an abrupt ridge of rocks divides this again from the basin of Iyssk-kul. The first view of this lake is very magnificent. The mountains rise from its very waters on every side: the Alataon to the north at a height of about 15,000 feet, and the Thian-Shan to the south about 18,000 feet, form two almost unbroken walls which reduce the immense breadth of the lake, nearly 40 miles, to nothing when seen from this elevation. The mountains at the other end of the lake, 110 miles away, show their peaks above the horizon of the waters so clearly outlined as to make them look within a few hours' ride.

Iyssk-kul, the "hot lake," lies at a height of over 5000 feet above the sea, about 60 miles from Vernoe at its nearest point, and about 250 from Kashgar. It is called Issyk-kul, or hot lake, from its never freezing, which fact is accounted for by the number of hot springs in it, making it impossible even to bathe in certain places, according to my informants. The water is very clear but slightly salt, though drinkable; it swarms with fish, which form the chief article of food for the Russian peasants who have colonized the valleys of the streams running into it. From Karakol, the chief Russian settlement at the east end of the lake, a little-known pass runs to Kashgar across the mountains; but the pass through the fort of Naryn, which is passable by the native carts, is universally preferred to it. Before the Russians occupied the Musart, the trade between Kuldja and Kashgar, to avoid Russian interference, went over that pass, which is so difficult that the horses have to be let down tied with ropes over one place; but now that the Russians have seized all the passes, the natives prefer the easier one through Fort Naryn. So unbroken is the chain of this huge range that the passes from Tashkend to Manas may be counted on one's fingers; only two, that from Aulie-Ata to Kokan, and from Vernoe to Kashgar through Fort Naryn, being fit even for the 9-foot wheele ' arba, or carts, of the Sart traders.

In connection with Issyk-kul a very ingenious, and probably correct theory, has been made by Colonel Tchaikorski, of Samarcand. At present the Tchu—a swift and deep river which flows in a bed much larger than its present size would seem to allow it—passes close to Lake Issyk-kul, divided from it only by a narrow ridge. Iyssk-kul, as we know from the Chinese records, was formed by some convulsion of nature about 150 years back. The valley appears to have been thickly populated, judging from the remains of villages which are clearly to be seen under the water in several places, and from the fact that money and bones are not unfrequently washed up to the shore. Even a Spanish gold piece was once found in it. The depth of the lake is immense, judging from the inclination of the shores and the few soundings which have been taken, and the body

of water in it must be enormous. The Chu, after leaving the ravine of Buam near Issyk-kul, flows through miles of steppe and sand, and loses itself in the lake Saimal-kul, which is only a few miles from the Jemman-Daria, part of the Syr-Daria. The formation of this marsh—for it is now little more—indicates that the Chu once must have flowed on into the Syr-Daria. Now, from the opposite side of this dried up lake on the Syr starts the old course of the Syr, called the Yani-Daria, which on most maps is only marked as reaching about half way to the Amu-Daria, but which was traced by the late expedition for the whole distance between the two rivers. This, again, falls into the Amu, almost exactly opposite the spot where the old course of that latter quits it for the Caspian. It will be seen that if the course of the Tchu be prolonged, following the curve of its course from Issyk-kul to Sáimal-kul, it would follow exactly the course which I have pointed out. May we not, therefore, conclude that not long ago the waters of Issyk-kul overflowed into the Tchu, and that that river, swollen to many times its present size, formed, together with the Syr and Amu, a stream sufficiently large to reach the Caspian. This theory disposes of the idea that the Amu by itself has not enough water to reach the Caspian, which has been urged against the scheme of turning the river into its former bed. The more I have thought over this idea, the more the simplicity and probability of it has forced itself into my mind, and an examination of the land between Sáimal-kul and the Jemman-Daria showed distinct traces of water upon it at a period not far back. All this strip of land is lower than the adjacent country, covered with marshes, half-dried pools, which any river turns into lakes and reed-beds, which bear witness to the fact that a great river once flowed here. To drain Issyk-kul would be a task beyond almost any government, not to speak of one so feeble as Russia in Turkistan, and to regulate the outpour of its waters into the Chu would be almost impossible.

I did not myself pass through the ravine of the Chu, near lake Issyk-kul, but all the persons with whom I spoke agreed in saying that it has no connection with the lake. I knew that in many maps a little junction was marked, but knowing also how frequently it happens that, when a river passes close to any lake, some adventurous geographer inserts a connection which does not in reality exist, I considered that it must have been so in this case also. I now, however, find in Colonel Wirgman's translation of Von Hellwald's work the following passage:—"It (Issyk-kul) was long considered as the original source of the Chu; but only a small affluent of the Chu, the Kutemaldy, flows into this mountain-lake." I do not know whether the mistake is that of the author or of the translator; but, even allowing that "out of" should be read for "into," he would contradict himself by saying, as he does, that "a small plain, gently sloping towards the east, lies between the lake and the Chu," in which case this supposed affluent would flow up-hill. If the words are correct, the Chu would divide into two branches, one falling into Issyk-kul, and the other passing on to the plain below, which, I believe, never happens—never, at all events, with a stream so swift as the one in question.

I need hardly point out the importance of this to the Central Asian question. The turning of the Amu-Daria has often been mooted, and the chief reason against it has been the want of water to allow its navigation from the Caspian; whereas, if this volume of water could again be poured into it, we may consider that it would, at all events, be sufficient for floating rafts, or the little steamers, which on the Syr-Daria now cross places less than 4 feet deep. The superiority of such a route over the present roads, or even over the projected railway, would be considerable, as the native merchants care very little for speed of traffic, and a great deal for its cheapness.

Another fact that I would wish to call attention to is that Russia has it in her power at any moment, without sending a single man beyond her frontiers, to make all Bokhara perish miserably. At the present time the authorities of Bokhara send occasional statements to the governors of Samarcand as to the quantity of water which is required in Bokhara, acting on which the governor orders the arks or irrigation-canals, in the district of Samarcand to be opened or shut for so many days. By turning the Zarafshan into these canals, a step which could be taken in two days, not a drop of water would reach Bokhara.

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AMERICAN GEOGRAPHICAL SOCIETY.

February 16th, 1874.

CHIEF JUSTICE DALY after some preliminary remarks, introduced Gen. JAMES H. SIMPSON, U. S. Army, who read a paper on—

THE EXPLORATIONS OF FRANCISCO VASQUEZ DE CORONADO IN SEARCH OF THE SEVEN CITIES OF CIBOLA.

He said,—It is probably a very common belief among the masses that this continent was first inhabited by a civilized people, after Christopher Columbus discovered it in 1492; but the ruins which at the present day remain, many of which I have myself seen, together with their history, which has come down to us from Spanish explorers, as early as the middle of the 16th century, attest with unerring certainty that this continent had been previously inhabited by a people who were so advanced in civilization, that they lived in organized communities, cultivated the soil, and inhabited cities or villages, the houses of which were made of stone, planned in the most methodical manner, and built with a precision, and in such magnitude, as to challenge, even now, the admiration of the modern explorer, and to eclipse in style and durability those of the present day, which have been the achievements of the Spaniards and Mexicans of more recent times. With regard to the mounds and other evidences of a people long passed away and which had been found throughout our land, on the east side of the Rocky Mountains, I am not aware that they are of such a character as to show that the originators of them were anything else than barbarians, or at least a race that had made but little progress in the arts of civilized life. Such an inference, however, just in reference to the *tumuli* aborigines of this country, would be very unfair in reference to the builders and denizens of the immense stone and regularly constructed edifices, which are at the present time to be found in ruins, in New and Old Mexico, and in Central America. In the fall of 1849 I was military engineer to a body of troops which was commanded by the late Colonel John M. Washington, U. S. Army, then Governor of New Mexico, and which made an expedition into the country occupied by the Navajos, lying some 200 miles to the south-west from Santa Fé. In the course of our march, after crossing the *Sierra de los Mimbres*, or as it is laid down on some maps, the *Sierra Madre* (the high convex land dividing the tributaries of the Gulf of Mexico from those of the Pacific), we came to the Rio Chaco, a small tributary of the Rio San Juan, which is itself a tributary of the Colorado of the West. Learning from our guide, a Spaniard, that on this tributary there were some ruins of edifices of an origin unknown to the Indians, among whom they were situate, I obtained leave from my commanding officer, and with the guide, and seven Mexicans as an escort, with Mr. Richard M. Kern, who had been with Fremont, as my artist, I absented myself two days from the command in search and examination of these ruins.

We first came to a ruin called by the Pueblo Indians of the present day the Pueblo of Montezuma; by the Mexicans, the Pueblo Colorado; by Hosta, an Indian, the Alcalde of Zemas, the Pueblo de Patones; by Sandoval, a friendly Navajo Chief, Pueblo Grande; and by our guide, Pueblo Pintado. Here was a structure still standing, with its walls, in places in their integrity,

as many as four stories high, which had been built of tabular pieces of a hard, fine-grained, compact, grey sandstone (a material entirely unknown in the present architecture of New Mexico), to which the atmosphere had imparted a reddish tinge, and on which account it was doubtless called Pueblo Colorado, and also Pueblo Pintado. The several courses of stone on the exterior faces of the walls were not more than 3 inches thick, the intervals between being chinked with laminar stones of the minutest thinness; the whole presenting at a little distance the appearance of a magnificent piece of mosaic work. The filling and backing were done in rubble masonry, the mortar showing no indications of the presence of lime, but appearing to be the ordinary earth of the country. The thickness of the main wall at base was about 3 feet; at the second story it was less, diminishing every story by retreating jogs from the inside. Its elevation at its then highest point was between 25 and 30 feet; the series of floors indicating these must have been originally at least four stories. I found no signs of the genuine arch about the building; the lintels of the doors and windows were pieces of wood, sometimes laid horizontally side by side; others a single stone slab laid in this manner, and occasionally a series of smaller stones, so placed horizontally upon each other that, while presenting the form of an acute angle in elevation, they would support the weight of the fabric above. The ground plan of the building, including the court, in exterior development was about 400 feet. On the ground floor, exclusive of the out-buildings, were fifty-four apartments, some of them as small as 5 feet square; and the largest about 12 by 6 feet. The rooms communicated with each other by very small openings, some of them as contracted as 2½ feet square. The principal rooms, or those most in use, were, most probably, those of the upper stories, the larger windows indicating this; though nothing could be definitely determined on account of the partitions between the rooms no longer existing. The system of flooring seems to have been unhewn beams, 6 inches in diameter, laid transversely from wall to wall, and then a number of smaller ones about 3 inches in diameter, laid across them. What was placed on these did not appear, but most probably it was bush, bark, or slabs, covered with a layer of earth mortar. The beams showed no signs of the saw, but seemed to have been hacked off with some imperfect instrument. At different points about the premises were three circular apartments, sunken in the ground, the walls being of masonry. These apartments the Pueblo Indians called *Estufas*, or places where the people had their political and religious meetings. The site of the ruins was a knoll, some 20 or 30 feet above the surrounding plain. Fragments of pottery in large quantities lay strewn around, the colours still very bright, and showing taste in their selection and in the style of their arrangement. The bed of the river Chaco, now an arrayo or dried up river, passed by it 200 or 300 yards distant, and no wood or grass was visible in the vicinity.

Hosta, the Pueblo Indian from Hernez, of which he was the Alcalde, who accompanied the troops, said this Pueblo had been built by Montezuma and his people when they were on their way from the north to the south; that after living here awhile they dispersed, some going east and settling on the Rio Grande, and others south into Old Mexico. About 12 miles further down the valley, or cañon of the Chaco, we came to another ruined structure called by our guide Pueblo Wege-gi. The walls of this building like the Pueblo I have before described were composed of very thin tabular pieces of compact sandstone. The circuit of the structure including the interior court was about 700 feet. The number of apartments on the ground floor, judging from what was distinguishable, must have been about 100. The highest existing elevation of the exterior walls was about 25 feet, the great mass of fallen *débris* at the base showing it must have been originally higher.

General SIMPSON then gave a description of other ruins farther down the cañon, of great extent and importance, and which contained rooms in a state of perfect preservation. After having detailed minutely the features of nine ruined edifices, all situated within an area 18 miles square, he said that it was a remarkable fact that these substantial ruins were now in a desert destitute of verdure and water, thus indicating a great change of climate. Of the origin of these ruins the Indians dwelling about them knew nothing. They must have been built, however, in remote ages by a people superior to the present race of Indians. Humboldt located the first resting-place of the Aztecs in their migration from North to South, near those ruins in the cañon of Chaco, which he had described. The learned gentleman then gave a lengthy account of the explorations of the Spaniards who, in the years 1540 and 1542, went in search of the seven lost cities of Cibola. After describing the perils of the expedition, before arriving at its destination, he said:—

On the following day, in good order, they entered the inhabited country; Cibola was the first village they discovered; on beholding it, the army broke forth with maledictions on Friar Marcos de Nica. "God grant that he may feel none of them." To continue Castañeda's relation, "Cibola is built on a rock; this village is so small that in truth, there are many farms in New Spain that make a better appearance. It may contain 200 warriors. The houses are built in three or four stories; they are small, not spacious, and have no courts, as a single court serves for a whole quarter. The inhabitants of the province were united there. It is composed of seven towns, some of which are larger and better fortified than Cibola. These Indians, ranged in good order, awaited us at some distance from the village. They were very loth to accept peace; when they were required to do so by our interpreters, they menaced us by their gestures. Shouting our war-cry of 'Sant Jago,' we charged upon and quickly caused them to fly.

"Nevertheless, it was necessary to get possession of Cibola, which was no easy achievement, for the road leading to it was both narrow and winding. The general was knocked down by the blow of a stone, as he mounted in the assault, and he would have been slain, had it not been for Garci Lopez de Cardenas and Hernande d'Alvarado, who threw themselves before him and received the blows of the stones, which were designed for him, and fell in large numbers; nevertheless, as it is impossible to resist the first impetuous charge of Spaniards, the village was gained in less than an hour. It was found filled with provisions, which were much needed, and in a short time the whole province was forced to accept peace."

The main army which had been left at Culiacan, under the command of Don Tristran d'Avellano, followed Coronado, as directed by him, every one marching on foot, lance in hand and carrying supplies. All the horses were laden. Slowly and with much fatigue, after establishing and colonizing Sonora, and endeavouring to find the vessels under Alarcon, already referred to, by descending the river, in which they failed, the army reached Cibola. Here they found quarters prepared for them, and rejoiced in the reunion of the troops, with the exception of certain captains and soldiers who had been detached on explorations.

After giving an exhaustive account of the return of Coronado, the General concluded with these words:—"Thus ended this great expedition, which, for extent in distance travelled, duration in time, extending from the spring of 1540 to the summer of 1542, or more than two years, and the multiplicity of its co-operating branch explorations, equalled, if it did not exceed, any land expedition that has been undertaken in modern times."

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BERLIN GEOGRAPHICAL SOCIETY.

HERR STUMM ON THE UST-URT PLATEAU AND THE OXUS STREAM.

HERR STUMM has communicated to the Berlin Society some remarks on the countries visited by him during the late Khivan Expedition. Among other regions his attention was directed to the little known Ust-Urt plateau between the Aral and Caspian Seas. Humboldt's opinion with regard to this elevated tract was, that it formed a continuation of the Ural system; but a careful examination of the minerals and fossils brought home by Stumm, has persuaded Dr. Bauer, an eminent geologist, that the Ust-Urt must, at a comparatively recent period, formed part of the great Caspi-Aral Sea basin, and that the *fauna* was identical with that found in those seas at the present day, and in many instances with that peculiar to the Euxine. The Ust-Urt plateau, moreover, is not a uniform and continuous table-land, but is composed of various elevations and depressions. It is destitute of vegetation except when there is any moisture in the atmosphere; but animal life, on the other hand, is by no means deficient. Flamingoes, cranes, wild geese and ducks are found 100 versts inland, while to the west a certain breed of small wild horses, wild asses, foxes, and hares, are plentiful. Stumm observed some finches, swallows and crows, and in the rocks of the Chink or edge of the Ust-Urt, eagles and vultures, while chameleon-like lizards, snakes, scorpions, and other reptiles were not uncommon. There were no traces of any human habitations visible, occasional wells and graves being the only tokens of man's handiwork. The temperature underwent astonishing changes: in the daytime it was as high as from 38° to 40° R., while at night it fell to 4° or 6°.

Lieutenant Stumm's researches on the subject of the Oxus and its old course agree in the main with those of Herr Roesler, an authority of weight. He ascertained that the Turkmen have a tradition that the Tejend and Murghab, which now lose themselves in the sands, formerly flowed into the western stream of the Oxus. From a comparison of all available authorities on the subject of the respective levels of the Caspian and Aral, Stumm points out that, during the period 1826 to 1858, the level of the Sea of Aral gradually approached that of the Caspian to the extent of 12 feet, and that at present the mouth of the Oxus is 106.3 English feet above the level of the Caspian. In conclusion, he enunciates a very decided opinion against the possibility of turning the waters into their old channel, and regards an eventual fertilization by that means of the Kizil-Kum Desert, as purely chimerical.

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FRENCH GEOGRAPHICAL SOCIETY.

Meeting of March 20th.

THE President, M. DELESSE, informed the meeting of the results of the transactions of the administrative commission of the forthcoming Congress. The programmes are in preparation, and the Admiral de la Roncière, as well as Baron Reille, are taking the necessary steps for the organization of the Congress.

M. DAUBREE in giving the latest news from Nordenskiöld, announced that Lieutenant Parent, of the Italian Navy, who had been the indefatigable assistant of Nordenskiöld, was present, and would give a narrative of the proceedings of the expedition.

Lieutenant PARENT stated that on account of the ice the expedition had not been so successful as was anticipated. They left Tromsö for Bear Island, but the inclemency of the weather prevented their reaching it. The vessel being an ironclad the compass became useless. In Spitzbergen they touched the South Cape, yet unknown, but the dense fog prevented their making any astronomical observations. From that point they made Isfjord, where a colony of Swedes had settled in order to work sulphate beds, but without success. In the month of August the expedition was stopped in Mussel Bay on account of the necessity of wintering there. The voyagers had provided themselves with a wooden house wherein to pass the winter, in those high latitudes; and were successful in making magnetic, meteorological, and astronomical observations during their hibernation.

The ships were suddenly frozen up in Mussel Bay, and from the 14th of October to the 12th of March the sun had not once appeared. During that time observations were made every hour, and on the 1st and 15th of every month magnetic observations were made at intervals of five minutes. With the 9th of November complete night set in—not so bad as that of our own climes on account of the moon and the northern lights. No mammalia, except bears and sea-calves, were seen, nor were any birds. Once only did the voyagers fancy they heard the note of a bird. Of their observations the most interesting were meteorological, which were made under 80°. More than once during the winter the snow melted, and the temperature rose to 0°. The south-easterly winds, which ceased to blow in February, gave the temperature of 0°; the north-easterly gave —27° (centigrade). The intensest cold observed was —38°, 5′, not so much as might have been expected.

In consequence of the sudden formation of the ice, the stock of provisions had to be divided amongst 66 men. The expedition had brought 40 reindeer to Spitzbergen, 39 of which were lost. This misfortune compelled the explorers to draw their own sledges when they started northwards to reach Parry Island, where they were stopped by ice barriers. It was a hard day-and-a-half's work to cross one of these barriers. The expedition having only brought 60 days' provisions with them, it was impossible to proceed at such a slow rate, consequently they gave up the attempt, and set out in the direction of North-East Land. After a march of fifteen days they came to Loken Strait, where they learnt that the ships had sailed on the 1st of July.

Dr. HAMY, an officer of the Natural History Museum, added that M. Parent was about to proceed to the Soudân in order to compare the races in the south with those of the north. When looking at the specimens preserved in the Museum, Parent remarked to him that men of the Akha dwarfish race had been sent by Miami as a present to the King of Italy. Dr. Hamy said that that type was not so exceptional and unheard of as some imagined. The negro drummer of the time of the first empire, preserved in the Museum, who claimed to be a Bornu, had the same anatomical characteristics as this race. According to information collected by Admiral Fleuriot de Langle, the Bungu tribe, living at the mouth of the Fernan Vazy River, was another branch of the same race.

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